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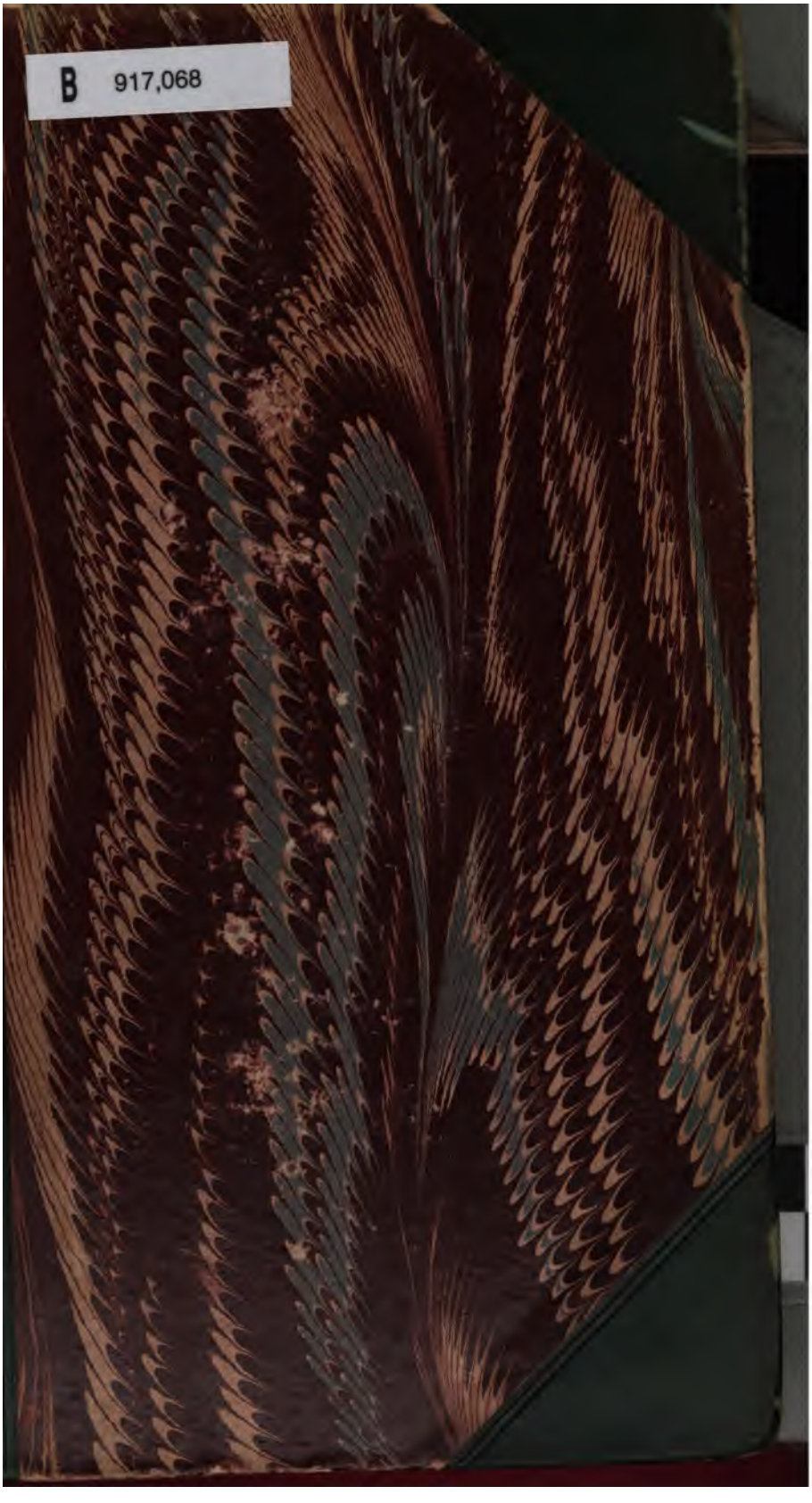
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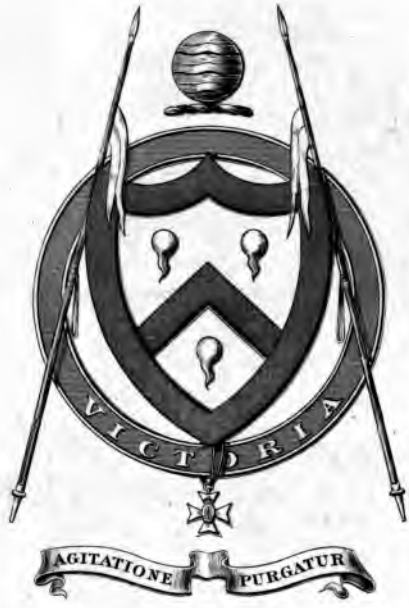

Major General John Cecil Russell,
Colonel 12th Royal Lancers.

Autumn Manœuvres.

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A RETROSPECT

OF THE

AUTUMN MANŒUVRES.

A RETROSPECT

OF THE

AUTUMN MANŒUVRES.

With Five Plans.

BY

A RECLUSE.

"Die Infanterie Offiziere, die in dem blutigen Gewoge Tage lang mitgekämpft haben, sind allein die vollgültigen Zeugen, denen man Glauben schenken muss."—*Taktische Folgerungen aus dem Kriege*, 1870–71.

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1872.

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1-10-52

PREFACE.

It is probable that there is no country in Europe in which military matters, generally, are so little understood as is the case in England. When war is being carried on, whether by ourselves or by other nations with whom we are in frequent contact, the most lively interest is evinced by a very large section of the population. On the suspension of hostilities, men of profession come forward in order to extract the lessons which the latest occurrences may provide for our own benefit. These are accepted and recognized, inducing a certain amount of reflection and anxiety on the part of those who take active share in steering the vessel of State on her course. But, with the mass, the interest roused fades with the excitement, giving way to other subjects of more immediate and touching

concern. The door is thus opened for the neutralizing action of men who will always be found, in a free country, anxious and eager to gain the public ear. Nothing is more certain than that military preparation is tantamount to national expenditure, which, where financial principles are observed, must surely in some form or other affect the individual. Footing, therefore, is soon obtained; and where armaments are objected to on the score of expense alone, the force of the argument will always make its way. But men have been found who are bold enough to vacate this ground; who would secure for this island a political isolation surpassing that of Japan; who deny its concern, other than commercial, with the populations of the geographical structure to which it is appended, basing this theory on their implicit belief in the impossibility of invasion. It will be observed that the case presented does not take into consideration the safety of the foreign possessions of Great Britain, or the fact that those possessions may involve us in military operations on other and distant territory. It is assumed that the egotism of the nation is such, that the conviction of individual security, fully entertained, will suffice for the ac-

ceptance of the writer's views. But the *ipse dixit* of a politician, however appreciated in other spheres, is clearly insufficient to attain this end. Failing in other professional support, the pages of history are opened for the purpose. Two precedents are thus invoked—the remote, but familiar, years of 1803–5, then the Crimean war.

Sceptics will be found who fancy that the preparations made by the First Napoleon at Boulogne indicate the conviction of the man who is credited with "the genius and ambition of a Bismarck, and the military science of a Moltke," that the invasion of Great Britain was not an impossibility, at a period when her maritime superiority had been more clearly demonstrated than is the case at the present moment. Students of history may advance that—opportunely, perhaps, for us—Austria had something to do with the abandonment of a project for which such vast preparations had been made. Strategists will aver that it was impossible for the Emperor to commit himself to an English campaign when the point of another lance was already aimed at his flank; deducing from that fact the value, under certain political conditions, to ourselves of Continental alliances. Every one will

recollect that the glories of Trafalgar were not earned until the Grand Army had been concentrated on the Danube, and Mack had capitulated. Moreover, the precedent will be considered somewhat far-fetched, and many will wonder how the Spanish Armada, or the Boulogne Flotilla, can be accepted as tests of a similar operation in our own day. They will wonder how "steam" can favour defence, when, by its agency, approach towards the object of its attack is so vastly facilitated. They will understand that clear aims and patient preparation are factors which entail the success of any undertaking that is not opposed by similar agencies. In the difficulties which attended our descent upon the Crimea, they will recognize the absence of clear aims, and the want of due preparation, declining to accept such shallow proof of future impossibilities. Englishmen should understand that the Conquest of France was a question of some little difficulty. Twenty years of warfare were barely sufficient when the nations of Europe coalesced for the purpose. How, then, has it come to pass that this has been effected in a few months by the Power which so recently ranked last amongst them? The answer is, that war and warfare are now

infinitely better understood than they then were, and that steam and mechanism facilitate the execution of great enterprises to an extent which, even now, has barely been realized.

It may be freely admitted that the study which has been devoted to land operations on the Continent of Europe has not as yet been extended to naval warfare. But it must also be remembered that the construction of our own navy has been effected within the last twenty years, and that, as regards naval tactics, our best officers are still in the dark. Is it right, then, is it prudent, is it creditable to our history, at a moment when every European nation is arming up to the Prussian level, to ignore the manner in which this fact inevitably reacts upon ourselves, and to grudge the expenditure which is required for proportionate armaments? The real advantage which insular territory secures to us consists in the certainty that we are safe from surprise. To effect a landing on these shores preparations are required which attract notice and require time. On the other hand, nothing can be more certain than that improvised armies are now absolutely valueless. If other arguments were wanting in support of the measures

It is needless to say that individual attack is the last purpose of the author. Had it been possible to avoid it, no name would have been entered on these pages. It must be recollected that these manœuvres represent a course of instruction for high and low. It would be the height of injustice to condemn an officer for a first failure, or to raise him to the skies for what, after all, may only have been accidental success. At the same time there is ample room for the development of military aptitude, and many will consider that the opportunity presented of bringing this to the surface is not the least valuable part of the exercises.

The chapters have been composed entirely without reference to official documents; and the difficulty of the undertaking may afford some slight apology for the many shortcomings with which it may be charged.

..... Col. Domville.
..... Capt. Strange.
..... Capt. Geary.
..... Col. Yates, C.B.
..... Lieut. Day.
..... Cooke.

ENGINEERS.

1st Company Royal Engineers.
1st Section Royal Engineers Train.
Pontoon Troop.
Telegraph Troop.

	Horses.	Officers & Men.
Engineers	303	479

tteries.	Cav. Regts.	Men.
3	5	9,002
3	3	10,704
3	3	10,326
5	0	1,074
14	11	31,106

THE

AUTUMN MANŒUVRES.

CHAPTER I.

"Il faut que les questions militaires, loin de rester un mystère, puissent être discutées avec intelligence par l'opinion publique. . . . Si le public doit gérer ses propres affaires, quelle affaire est plus importante que celle d'où dépend la fortune, la liberté, la vie des citoyens!"—*Rossel.*

"Il importe d'exercer les armées à de grandes manœuvres, simulacres sans doute fort incomplets des guerres effectives, mais qui y préparent incontestablement les troupes."—*Jomini.*

THERE are few Englishmen, with the welfare of their country at heart, who have failed to welcome the introduction of autumnal military manœuvres. Apparently, a general sense of satisfaction has prevailed at the manner in which they were arranged

and executed, and with the impression made upon foreign spectators. But little advantage will accrue to the army at large, unless they are closely examined and freely discussed. In the happy absence of actual combat, they offer the only opportunity for practical observation.

Two circumstances will have forcibly impressed those who have looked impartially on; the extent to which throughout we have leant on foreign criticism, and the greed with which we have snatched at every word of commendation. Both are indications of weakness. After their early victories the Prussians paid little heed to foreign praise; they proceeded to examine their successful actions, and ruthlessly laid bare the defects which were visible.*

* Baron Stoffel says ('Rapport sur les Forces militaires de la Prusse,' page 39), "Combien l'exemple que nous donne aujourd'hui la Prusse mérite d'être médité! Elle aussi est victorieuse en 1866. En conclut-elle que l'organisation de son armée ait atteint le dernier degré de perfection? Pour le croire il faudrait bien mal connaître ce peuple sérieux, vigilant et avide de progrès. On pourrait dire que la guerre de 1866, depuis qu'elle est terminée, n'est considérée par tous les officiers Prussiens intelligents que comme une épreuve qui a fourni à la Prusse l'occasion d'essayer ses institutions militaires. Plusieurs

It may startle Englishmen to hear that at present our army is ignorant of the art of fighting. Yet, if we are to judge from what has been recently seen, nothing can be more certain. The change in warfare has been so rapid, so thorough, that there is imminent danger lest those armies which have not been actually engaged within the last few years should be irretrievably distanced. It is not necessary to be a soldier in order to understand that, on a future field of battle, it will be too late to learn. Close and earnest study of recent incidents in Bohemia and France can alone replace our own want of experience. Probably there is not a regiment in the service which does not contain some few reflective men who are fully alive to this fact. On the other hand, a vast proportion of the older officers still base their trust in future victory on the innate fighting power of the British soldier; they cling tenaciously to the glorious traditions

généraux déjà m'ont dit: 'Nous n'avions pas fait une seule grande guerre depuis 1815, et comme notre organisation nous paraissait bonne, nous n'étions que plus désireux de l'éprouver. Mais nous avons commis bien des fautes pendant la campagne de 1866, et nous avons reconnus que beaucoup de détails pouvaient être améliorés.'"

under which they have been reared, and refuse to abandon their military religion.

But if this influence is to remain paramount, it may be predicted with the greatest certainty that it will lead to disaster. No one will underrate the value which the military history of a nation brings to its army; it is to that body what gentle ancestry is to the individual—something to treasure, something to love. But tradition is not history. The man who argues that because Line was the formation of British infantry at Minden, and on many a later field in the Peninsula, that formation must hold good for all time, is utterly ignorant of the history of his profession. An army cannot retire on its laurels as a merchant on his money bags. The intelligent soldier values the past for the confidence it may impart, but his eye is ever fixed upon the difficult future. Intellectual scouts are to an army in time of peace what its advanced posts are in war. Woe to the service which fetters their action, and ridicules their warnings; the infallible result, sooner or later, is surprise, and surprise in military life means defeat and ruin.

It is not in the British army alone that it has proved difficult to realize the truth. Where vic-

tory could be attained by discipline and devotion, it seemed scarcely necessary to enlist other elements. The bayonet in the hands of brave men has often defied the finer rules of art; but in 1866 the term of its power had evidently been reached. After all, it represented a compromise with the pike of old. The marvel is, not that its influence should have waned at last, but that, opposed to the firearm, its deciding action should have been maintained so long. Years before they took active part in these campaigns, the Prussians had recognized the present superiority of fire over the *arme blanche*. If proof of this were wanting, the confidence with which they formed the investing lines of Metz and Paris is sufficiently demonstrating. Where positions must be carried, this end can only now be attained by the development of superior fire—both of small arms and artillery—and by flanking movements. This implies careful forethought with regard to the distribution of artillery in the column of march, the perfect training and manœuvring freedom of that arm, the emancipation of battery commanders, and great skill and daring on the part of these. Precisely the same principles apply to the infantry. If it is impossible to approach defended positions

either in column or in line, it is clear that for action our present units must be broken up. This does not imply the disruption of the battalion; it signifies that its training must be altered, in order to convene to modern demands. The Prussians have not only fought with superior numbers, they have doubled their force by developing the destructive power of their arms.

The truth is that the year 1866 marked a fresh epoch in the progress of warfare. The extent to which this is the case can, perhaps, only be realized by those who make the art of war their constant study.* Certain it is that we are not gainers by

* Since the above was written, Rossel's work has appeared, with a very able review in the columns of the 'Times.'

The sad circumstances under which it has been composed, together with the peculiar characteristics of its author, must attract attention and sympathy. Many of the views expressed will be cordially endorsed by military students in other lands. But Rossel refuses to recognize that the art of present warfare is different from that which found its exponents in Frederick, Napoleon, Archduke Charles, and Wellington. The object of warfare is now, as it then was, victory. The means to this end must always remain,—destruction and demoralization. But if the art of war means anything, it implies the scientific application of such agencies as may be at our disposal for the above purpose. If these have changed, either in force

the change. Where duelling is abolished, there are few who care to cultivate the art of fencing. It is the sense of danger alone which really elicits the military sagacity of a people, and that sense is rarely roused in this island. Perhaps for this very reason it is the more necessary that the army as a body should be in a constant state of forward activity. That this is not the case the recent manœuvres have proved to conviction; the fighting formations there displayed were those of Mollwitz, not of Le Mans. It is difficult, indeed it is not advisable, that a disciplined body should reform itself; for the sake of discipline it is essential that the impulse should come from above. But this much is clear, that if victory is again to crown our future struggles, our tactical system must be radically changed.

or character, it seems that the art which regulates them must change also. Captain Rossel denies that the Prussians have originated aught that is new. Is there nothing original in their system of recruiting, organization, tactics, training, education, arms? Is no difference perceptible in their adaptation of railways for purposes of war? Have they not reduced the art of subsisting to a science? And finally, are no modifications in strategy, and the art of fighting, apparent as the result of these innovations since 1866?

N.B. This note was penned before the execution of Rossel.

If the study of recent warfare has brought any one truth clearly to the surface it is this, that to develope the fighting power and manœuvring freedom of an army, it is imperative to train subordinate officers for responsible action. Occasionally a voice is raised to repel the idea of Prussianizing the British army. But the purpose for which a military body is maintained is to enlist victory when its action is demanded by the State. Under present conditions of warfare this can only be effected by skilled fighting.* If the Prussians have thought out, and carried, this art further than other nations, the sooner we study and copy the means by which they have effected this, the better. It is quite true that in past history different races have evinced fighting characteristics of a different kind; but the breechloader has already proved itself a great leveller of such distinctions. "Whoever understands best," says Tellenbach, fresh from the reeking fields of France, "how to diminish the murderous effect of the firearms of the present day is certain of victory." If this be true, as it unquestionably is, the British bayonet and French *élan*

* 'Gedanken und Betrachtungen über den deutsch-französischen Krieg der Jahre 1870-71.'

lie buried in the same grave. The tendency is and ever will be to gain ground in battle, but this can no longer be effected by the steady close charge of a British line. There is not a country in Europe where this truth has not been amply recognised.

If we can consent to learn, it is impossible to find a better example than in the case of Austria. Returning from Denmark in 1864, where, strange to say, the value of breech-loading fire had been fully exposed, her officers still pinned their faith to the bayonet charge. So in 1865, Von Streffleur, the well-known editor of the best military periodical in Europe, expresses the wish "that the conviction now firmly rooted in the armies of Austria that the charge, with the firm determination to close, is of more avail than rifle fire, may never be shaken." Such was the conclusion impressed upon military minds after Magenta, Solferino, Selk and Oeversee, and the same conviction is still treasured in the breast of many a British soldier. A year later, Austria paid her penalty at Podoll, at Nachod, and Skalitz. Then she accepted the lesson, and the columns of the 'Times' have lately told us with what results.

Let sceptics study the valuable lecture delivered

recently to the officers of his command by the Duke of Würtemberg,* at Prague. The Prussians, be it remembered, had never yet fought against the breechloader when they crossed the Lauter and the Sarre. Their first startling successes called the Duke to France. With the incidents of 1866 fresh in his memory, it seemed hard to credit that prepared positions, occupied by regular troops, armed with the Chassepot, had been carried by the Prussian bayonet. Thanks to his rank and recognised military qualities, sources of information were available for the Duke, which have hitherto been denied to less favoured individuals.

He tells us that the experience gained by the Prussians in their early actions was very costly in human life; that, in manœuvring in half-battalions with skirmishers, supports, and reserves, these last suffered most, and that to escape destruction they pushed on towards the front. Further, that both at Weissemburg and Wörth, the advantage derived from the superior tactical formations, and individual fighting capacity of the Prussian soldier, was clearly apparent. The independent action of the company columns contributed largely,

* Lieutenant-General in the Austrian Army.

more especially, to the victory at Wörth, where there was much wood-fighting. But the losses inflicted on troops in close formation were terrific, and the repulse of the Prussian Guard* in the famous assault on St. Privat, on the 18th of August, with a loss of 6000 men, decided the question. *From that day the order went forth that no troops in close formations, on open ground, should approach within 2000 paces of the enemy's line of fire.* Where attack across the open could not be avoided, it was to be effected in extended lines; skirmishers, supports, reserves, all extended. In this order Le Bourget was attacked and carried.

The Duke lays particular stress upon the direction given to offensive movements by the Prussians, contrasting these with similar efforts on the part of the French. After insisting that the increased destructiveness of firearms has not impaired the necessity and value of offensive action, he explains that the causes of French failure and Prussian success were principally attributable to the fact that, when the French struck, they aimed their blow direct, whereas the Prussians invariably sidled

* The Duke's information is confirmed by the author of 'Taktische Folgerungen aus den Jahren 1870–71.'

off to one or both flanks. He adds that the French formations were precisely such as to offer the targets required for the Prussian fire.

All writers whose evidence is of any value, agree that we must break with the past. Henceforth it is *the ground* which will inevitably dictate the formations of the troops treading on its surface. It follows that, owing to its varying incidents, immense latitude must be ceded to subordinates. Extension, cover, rapidity of movement and rallying, such are the elements of modern offence.

It would be easy to allude to the further changes which such considerations will necessitate even in the Prussian army, but sufficient has been said for us to realize the state of our own. The present tendency in the British army is hardly to teach, to train, and to trust: drill and close order are the idols it worships. To grasp and retain, not to distribute and delegate authority and responsibility, are the principles it advocates. That they are fatally opposed to the spirit of modern warfare, no one can doubt.

Many who recognise the standard of intelligence which characterizes the officers of the service will wonder that this should be the case. Why should

the profession stagnate here when every other army is full of fresh life and action? The answer is, that with us, the source of true vitality is absent. Where is the General Staff of the British army? Staff officers we possess, but no Staff. Yet nothing can be more certain than that without its action no military body can be kept up to the level of the day. The officer entrusted by the State with chief command must necessarily be dependent in great degree upon its organized efforts. Without the careful subdivision of labour which every scientific institution entails, how is it feasible to master such ever varying subjects as Military Organization, Tactics, Fortification?

Those who have perused Baron Stoffel's work will understand what its General Staff has effected for the Prussian army. It has matured its system, educated its officers, produced its leaders, and kept it steadily on the path of intelligent progress.* An army without a permanent Staff is like a ship with-

* He says in his note to page 17 of the work already quoted, "Aujourd'hui, presque tous les généraux de l'armée Prussienne sont d'anciens élèves de l'Académie de guerre, et les trois-quarts ont servi dans l'état-major. La proportion ira en augmentant."

out a rudder, at the mercy of every gust of wind; its intelligence is not recorded, its efforts not applied, its labour spasmodic and evanescent. Without guarantee for its future it remains dependent upon frail empiricism. The Staff is to an army what Parliament is to a free and loyal people, its voice and its safeguard.

It will doubtless have occurred to many who ponder over the military portion of a nation's history, that the paramount influence of one great character is not an unmixed benefit. If Jena be justly traced to the spent *prestige* of the second Frederick, it is assuredly no less true that many of our present embarrassments are due to a fond regard for the views of our own Great Duke. But the gulf between 1815 and 1870 is simply unfathomable; it is criminal to linger with the past when the handwriting on the wall indicates the future. "The innovations and experience which Prussia has worked out during sixty years," says the Archduke Albrecht of Austria, "should be at once taken into account, and the road before us shortened accordingly." It is Prussia who dictates in such matters, with a fighting system as superior to our own as the Legion was to the Phalanx.

There can be no better test nowadays of the professional quality of an army than the capacity it evinces for assimilating the experience of others. It is this virtue, engendered by hard work and study, which has enabled Prussia after fifty years of peace to assert her present mastery in war. And let no one underrate the character of the task; it is not easy to attach to each factor in defeat and victory its due share of importance. It frequently occurs that the lessons of a campaign are misinterpreted, if not altogether lost. Who can assert with truth that the British Army has turned its last great war to account, when its solitary record is the handwork of a civilian?

One great legacy reverted to the nation after the Crimean War, in the shape of the Staff College. The traditions, the habits of the army, were against the institution, and its early youth was stunted accordingly. Of late years it has provided the officers for what may be termed the minor Staff. But these, with us, are individual appointments; they come and go, and leave no record behind. Nothing can be more consistent with the health and vigour of an army than the constant interchange of staff and regimental duties for its educated officers,

but this should not affect the permanence of the Staff as an institution. If the State sows, it should know how to reap. In Prussia the *Grosser-General-Stab* is at once the pride of the army and the aim of the individual; in it the intelligence and ability of the army is centred and utilized. With us this runs to waste, or is turned into the columns of the press.

A few more words, and this portion of our subject may be dismissed. The one point in the Prussian military system which elicits universal admiration is its perfect uniformity; the value of this to an army when the war-test arrives is inestimable. Probably the reader will recollect the mixed Southern contingents which were hurried up to the Maine in 1866, to fall an easy prey to Falkenstein's soldiers. On the conclusion of peace, the first step taken by Prussia was to extend her own military system to the Southern States. When war recommenced in 1870 she exchanged throughout the Staff-officers of the South for her own; by this agency she succeeded perfectly in deriving the same military value from the Bavarian, Würtemberg, and Baden contingents that she demanded from her own soldiers. If, then, the influence of the General Staff is equalizing and

harmonizing to this extent in Germany, is there no room for similar action with ourselves? It is not beneath our dignity to copy literally the rules for the regulation of peace manœuvres, why, then, should we hesitate to study and introduce the organ of the Prussian *Kriegführung?*

There is one more subject connected with the forces we have recently displayed which merits serious consideration. Notoriously one-fourth at least of the troops reviewed in the Long Valley on the 22nd of September was supplied by the Militia and Volunteers. If the remarks already made are such as to deserve attention, it is certain that fighting in the present day is a much more difficult art than it has ever heretofore been considered. It implies, not merely collective, but very intelligent individual training on the part of every officer and soldier. When this is not the case, extended fighting is more or less impossible; the regiments and companies would slip away from the control of their officers, and soon merge into a confused and disorganized mass. Since 1866 Prussian writers have triumphantly pointed to this inevitable consequence, with the inference that, where the conditions are not similar to their own, the problem is not capable of

solution. One and all they attribute the success which has crowned their own efforts to the pre-eminent intelligence of their material, as well as to the grounded education of their officers. If this be so, what place can be claimed for the Militia in the military operations of the future?* It is asserted

* The author of the work quoted more than once above states his views on this subject as follows:—

"It was only the battles of the first French Army which bore the character of well-contested struggles, the result of which one could scarcely foretell; and the victory over these soldiers, trained in time of peace, cost the German armies nearly thrice as many killed and wounded as the entire subsequent war. In the three days' fighting round Metz, the Germans lost nearly twice as many killed and wounded as in all the actions subsequent to Sedan.

"Up to Sedan, whenever the armies met in decisive action, the numerical superiority was on the side of the Germans. From that time it was almost always on the side of the French, and that in a two or threefold degree, an advantage from which they failed to derive the smallest results.

"With this experience in our hands, it may be expected that, for the future, the question as to the relative value of Militia and National Levies on the one hand, and regular troops carefully trained during time of peace for war on the other, will be finally set at rest, even for those who have been most enthu-

that the regiments present during the manœuvres did not fairly represent the force. However true this may be with regard to outward appearance, it is simply impossible that any marked difference can exist with regard to intrinsic military value. Recruited and framed as the force at present is, the task of training it for purposes of the field is simply hopeless. Considering the character of the material which fills its ranks, it is more than doubtful whether, even with competent officers and the utmost limit of time available, it can ever be rendered truly efficient.

On the other hand, these remarks would lose all force were the character of the material recruited changed. Where a short period only is available for training, it implies great intelligence on the part of the individual, with a thoroughly digested system of instruction, in order to attain the requisite standard of efficiency. Unwittingly the eye turns towards the Volunteers. At a moment when every practical soldier lays infinite stress upon the value

siastic in their advocacy of the former." ('Gedanken und Betrachtungen über den deutsch-französischen Krieg der Jahre 1870–71.')

of *accurate* fire,* this alone commands attention. Moreover, it cannot be doubted that aptitude for present warfare is peculiarly present in the force, could this be fully developed. But the initial difficulties which beset the question seem almost insuperable. However admirable and intelligent the material of an army may be, it is essential that its officers should have the power and the will to assert the fullest mastery. The consideration shown in Prussia for individual education in the ranks is strictly measured by the cession of will evinced by the soldier. The stern system of discipline introduced by Frederick's father is still in full force, the very foundation of the fabric. Admitting the truth, and sharing the admiration expressed in Lord Derby's recent words, it is necessary to bear in mind that peace exercises offer no accurate picture of war. It is when the passions are unchained, when hunger, fatigue, suffering, and panic assert their power that the restraining influence must be found at hand. To this end two agencies are required,—habit, and respect for the superior. In time of peace this

* 'Gedanken und Betrachtungen über den deutsch-französischen Krieg der Jahre 1870–71,' pages 232–6.

last influence may be asserted by social position, but unless accompanied by thorough professional capacity it will assuredly break down on actual service. Let the State continue to encourage the instruction of this promising force, reserving to itself the power of framing it according to discretion when the hour for action arrives.

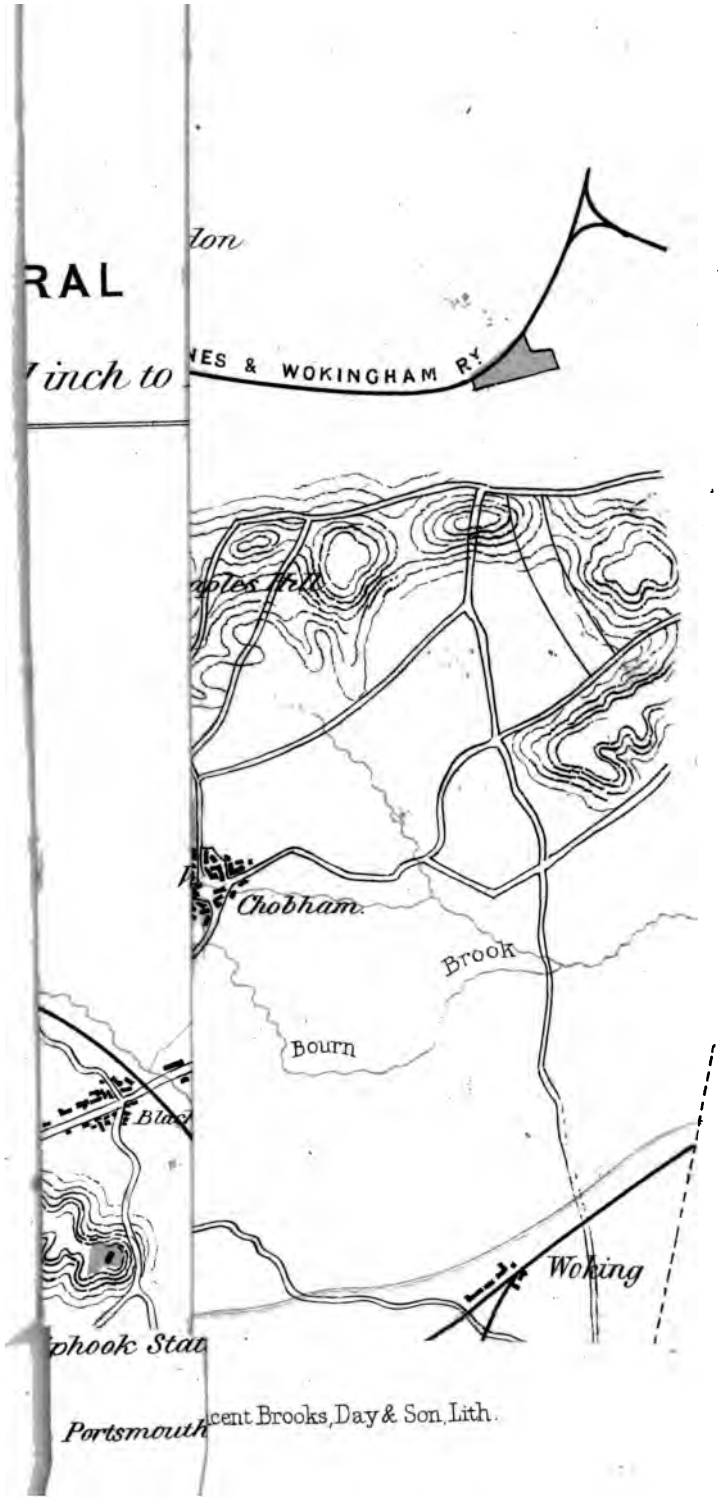
CHAPTER II.

"Il n'y a pas d'exemple d'homme de guerre sans étude, sans éducation complète."—*Rossel.*

"Seit 60 Jahren haben wir an unseren Feldmanövern fest gehalten, und zu unserm grossen Glück. Jedermann erkennt jetzt an, dass es diese Manöver waren, die unseren Offizieren und Soldaten in der langen Friedenszeit ein möglichst ähnliches Bild des Krieges lieferten, welche den Soldaten an die wahren Beschwerden des Krieges annähernd gewöhnten, und sie sich in fremden Terrain und in kärglichen Bivouack einrichten lehrten." ('Taktische Folgerungen aus dem Kriege 1870–71.')—*Capt. Boguslawski.*

DURING the last days of August, the troops selected for participation in the purposed manœuvres concentrated at or round the permanent camp at Aldershot, and in the course of time were formed into three Army Divisions.

(*Forms of Ordre de Bataille : see separate sheet.*)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On Friday, September the 9th, after a very wet night, the 2nd Division formed on the Queen's Parade, North Camp, at 6 A.M., in order to move from the permanent camp to Hartford Bridge Flats.

At the same hour, on the same morning, the 3rd Division paraded on Rushmoor Bottom, South Camp, for the purpose of marching to Frensham Common, *en route* to Woolmer.

Both Divisions were provided with the field equipment peculiar to the Army for purposes of encampment, and with transport calculated on the footing for actual service. They reached their destinations on the 9th and 10th respectively, settling themselves on the ground selected.

Writing on Tuesday the 13th, the Special Correspondent of the 'Times' with the 1st Division states, "The 'enemy' having since Friday established himself at Woolmer and Hartford Bridge Flats, the force at Aldershot becomes so seriously compromised, as a corps covering the approaches to the Metropolis, that it was obliged to abandon the Camp, and move out to occupy a position of greater strength, to enable it to secure its communications and receive reinforcements. Look at the

map, mark Staveley's Division at Woolmer as (A), and Carey's at Hartford Bridge as (B), and you will see that Sir Hope Grant's Division at Aldershot (C) would have a very poor chance against the enemy; for if he moved to attack either, he would expose his flank and his standing camp to the other. He is not strong enough to be sure of beating whichever force he attacks," etc. (Plan I.)

Accordingly the 1st Division moved on the 12th to Bisley, where it halted for the night, continuing its retreat on the following morning to Staples Hill. Here it placed itself in position on the high ground commanding the junction of the roads leading to Guildford, Woking, and Chertsey.

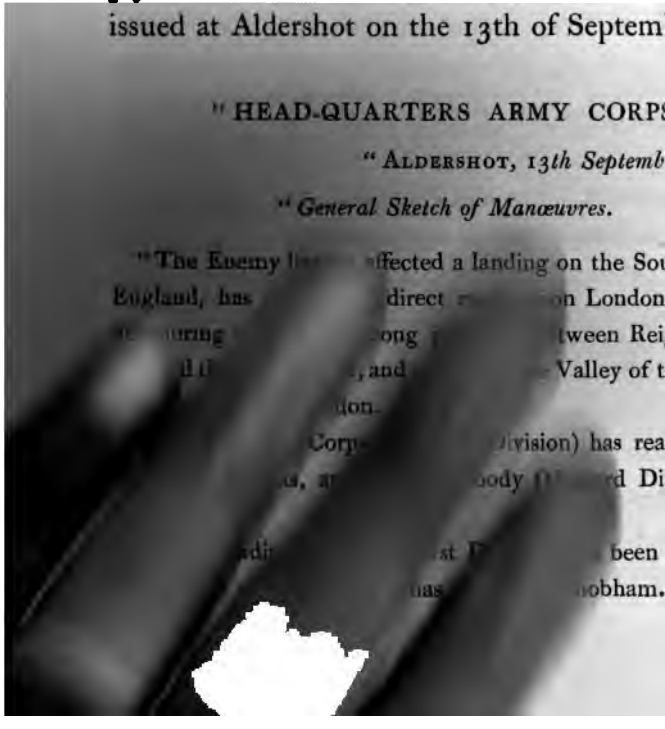
The 2nd and 3rd Divisions employed the first days of the week in manœuvring, with a view to accustom the different arms to combined movements; but on Thursday the 14th Staveley marched back to Frensham from Woolmer, and [illegible] on that common.

On the same day Carey was [illegible] Flats, retreating first to [illegible] Friday the 15th to [illegible] his junction with [illegible]

shifted its ground to Thursley, in order to make room for him. (Plan II.)

No movement of importance is reported on the part of the 1st Division on the 14th, on which day its Commander was employed, apparently, in strengthening the position selected for his tactical base, by artificial means. On Friday, however, he struck his camp, and moved upon Pirbright, pushing his advanced posts as far as the Hog's Back.

These movements were effected in order to comply with the "General Sketch of Manœuvres" issued at Aldershot on the 13th of September.



"HEAD-QUARTERS ARMY CORPS.

"ALDERSHOT, *13th September*, 1871.

"*General Sketch of Manœuvres.*

"The Enemy [illegible] effected a landing on the South Coast of England, has direct[illegible]n London, and is en-[illegible]uring [illegible]ong [illegible]tween Reigate, Dorking, and [illegible] Valley of the Thames, [illegible]don.

[illegible] Corps [illegible]ivision) has reached Hartley, a[illegible]body [illegible]d Division) is at [illegible]

[illegible]di[illegible]st [illegible] been collected in [illegible]has [illegible]obham.

"Such is the position of this day.

"*Thursday*, 14*th*.—The Officer Commanding Defending Force having got information of the position and strength of the Enemy's advanced corps, breaks up his Camp at Chobham, and advancing to Chobham Ridges, threatens its communications, throwing out Cavalry to Frimley, Farnborough, and across the canal to Pirbright.

"The Enemy (the 2nd Division) ascertaining this move by his scouts, falls back across the Basingstoke Canal, and takes up a position near Cæsar's Camp, sending information of the advance of Defending Force to the main body, which moves to his support, and encamps at Frensham.

"*Friday*, 15*th*.—The Enemy's advance corps continues its retreat, and effects a junction with its main body near Frensham.

"The Defending Force continues to advance, and encamps at Pirbright, throwing out advanced posts to occupy the commanding ridge of the Hog's Back.

"*Saturday*, 16*th*.—The opposing forces being now in contact, the general operations will commence.

"By command,

"C. R. EGERTON,

"Major-General,

"*Deputy Adjutant-General*."

On the 11th of September the following Army Corps Orders had been already issued:—

"ARMY CORPS ORDERS.

"ALDERSHOT, *September* 11.

"His Royal Highness delegates to the General Officers in command of Divisions, the most unfettered control (within the regulations of the service) in the arrangement of their own Divisions; they will be responsible for all details of movement, discipline, supply, etc., as well as for the strategical and tactical handling of the force committed to their charge; his Royal Highness giving out daily the general idea only of the operations to be carried out when the general manœuvres have commenced."

The area proposed for the operations had been determined by the "Military Manœuvres Act." It extended in every direction considerably further than is shown in the General Plan, which has been purposely restricted to the actual theatre. This had evidently been selected on account of the interesting military features it presents. Indeed, the ground, though somewhat restricted for operations extending over several days, seems otherwise admirably adapted for the purpose. Hill and valley, open moor and fenced fields, woods and villages, roads of every sort and kind, with a canal to represent a river-line, offer ample opportunity for the exercise of military skill, and variety of

military manœuvre. The tendency of the order relating to the unfettered action of Commanders, seems equally satisfactory. Both steps are in accord with the principles advocated in Prussia for the "Conduct of Peace Manœuvres," as will be seen by the following extracts:—

"1. The general military situation at the commencement of the operations, must be laid down with such an amount of detail and precision that each leader may be fully instructed on every point on which in real warfare he may be supposed to have obtained information. In addition, therefore, to the number of troops under their command and their distribution, they must be informed of all circumstances beyond their immediate sphere of action which might fairly be supposed to influence their conduct. On the other hand, no orders, or even hints, should be conveyed to them with regard to any subjects on which in real war they would have to decide to the best of their judgment and ability."

"2. It is absolutely necessary that the general situation originally sketched out and communicated to both sides should, in the first instance, involve as wide a separation as possible of the opposing forces, in order to permit of those preliminary movements which form one of the most essential and instructive portions of field manœuvres."

Further:—

3. "It is very desirable that troops should be accustomed to manœuvre over all kinds of ground. It is therefore essential

that a district should be chosen as the site of the manœuvres, which presents varied natural features, and which admits of the free movement of all arms of the service. No modifications in the configuration of the ground should be supposed to exist which do not exist in reality."

On the other hand, the "general idea" or "sketch" is open to criticism. The "Times" correspondent assumed correctly enough that Sir Hope Grant's position at Aldershot was compromised by the presence of two divisions each equal in strength to his own, at Woolmer, and at Hartford Bridge Flats. For purposes of continued offence, the separation of these forces may be considered more favourable than the close concentration subsequently adopted.* The "sketch," however, assumes that—

* Let us take the somewhat similar situation of the two Prussian armies in Bohemia, on the 30th of June, 1866. The Prussian official account (vol. ii. p. 239) says:—

"Thus it was open to the Prussian armies to unite at once, were this measure deemed advisable. It was, however, preferred to continue a separation, which, free from strategic risk, offered important tactical advantage. If, for instance, the enemy were found in a position too strong for direct attack, the armies would only have been united in order to separate again for the purpose of flanking movement. Neither of the armies

"The officer commanding defending forces, having information of the position and estimated strength of the enemy's advanced corps, breaks up his camp at Chobham, and, advancing to Chobham Ridges, threatens its communications, throwing out calvary to Frimley, Farnboro', and across the canal to Pirbright."

That is to say, the General in question purposes voluntarily to place himself in that position which entailed for Napoleon his Waterloo, for Benedek his Sadowa, and from which he himself had already prudently withdrawn. To comply with this extraordinary assumption, Carey was retired from Hartford Bridge Flats to Frensham, first to unite with, and subsequently, so soon as operations commenced, to separate again from Staveley.

It is difficult to understand this apparently unnecessary departure from sound strategic rules. The objections to any such course are manifest. It is laid down in the Prussian regulations "that in arranging these manœuvres, it must always be borne in mind that the principal object to be attained is, to give as accurate a picture of war as is

—distant one short march from each other—was exposed to danger in case of attack, because the enemy must have offered his flank in either direction."

possible, whilst considering the unavoidable limitations which peace imposes." It is not an accurate picture of war to assume, without qualification, that communications are threatened, when such is not the case. On the contrary, that assumption may tend greatly to increase the perplexity which prevails in half-educated military minds. In reality, there was no necessity for any assumption of the kind. Carey's march to Frensham might have been effected, if considered necessary for the subsequent operations, without any strategic hypothesis whatever. Operations had not commenced; the "sketch" proposes their commencement on Saturday the 16th of September. It is always well, where military operations are concerned, whether in war or peace, to start from sound ground, otherwise the avenging goddess is certain, sooner or later, to put in an unwelcome appearance.

"The following revised rules for the Umpire Staff and troops during the manœuvres," were issued on the 15th of September.

"REVISED RULES FOR THE UMPIRE STAFF AND TROOPS DURING THE MANŒUVRES.

"RULES TO BE OBSERVED BY THE UMPIRE STAFF.

"1. The Umpire-in-Chief will be his Royal Highness the

Field-Marshal Commanding-in-Chief, or other general officer commanding.

"2. The Umpire Staff will be distinguished by a broad white band round the right arm, above the elbow.

"3. All orders from the Umpire Staff are to be considered as directly emanating from the Umpire-in-Chief, and are to be carried out with alacrity.

"4. No General, or other officer commanding a brigade, regiment, or battery, is on any account to enter into a discussion with the umpires.

"5. The umpires may halt any body of troops and order them to retire behind the first line, or to any position indicated, and, in case of collision, the umpire may decide whether a body of troops has become so non-effective as to be withdrawn from immediate action, or whether it is to take no further part in that day's manœuvres, or whether it is to be sent to the reserve.

"6. The umpires will decide on the actual present circumstances, without reference to their effect on the general course of the manœuvres.

"RULES TO BE OBSERVED BY THE TROOPS.

"1. The opposing forces will be either dressed differently (dress and undress), or one side will be distinguished by wearing forage caps, or, as to-morrow, by green leaves or heather in their head-dress, *vide* paragraph 4 of Army Corps Orders of this date.

"2. The umpires are general umpires for all arms, and the umpire on the spot will decide all questions connected with artillery, cavalry, or infantry.

"3. The umpires shlal take their posts between the opposing

forces in the most advantageous positions; they will be distributed, as nearly as possible, two in the centre, and two towards each flank.

"4. If no umpire is present when a doubtful point occurs, a general officer or brigadier may send for one, the troops remaining halted till he arrives.

"5. No troops are to approach within 100 yards of an opposing force; as a general rule the weaker body should retire; if for any reason it does not do so before the limit laid down is attained, the opposing forces are to halt, order arms, return swords, and wait until the umpire decides which is to fall back.

"6. Lines are not to exchange volleys nearer than 250 yards.

"7. Skirmishers are to cease firing when within 200 yards of opposing skirmishers.

"8. Cavalry charges, to be considered effective by the umpires, must be delivered with proper energy; the charging forces must be halted when within 100 yards of the opposing body.

"9. Cavalry and artillery are not to remain halted under effective fire of infantry or artillery.

"10. Skirmishers and artillery are not to move across a plain commanded by enemy's cavalry unless supported.

"11. Guns limbered up, if unsupported or weakly protected, may be captured by cavalry or infantry skirmishers.

"12. Beaten cavalry must retire at a trot. Victorious cavalry may follow at a walk at 300 yards distance.

"13. A battalion in square (unshaken) cannot be attacked by single squadrons of cavalry. Three or four squadrons may attack if the square is assailable from different sides.

"14. When infantry are defeated by infantry (according to the umpire's decision), the victors may pursue at 300 yards distance.

"15. Obstructions are only to be considered tactical obstructions when they form actual natural obstructions, or are on prescribed ground.

"16. The 'cease fire' and 'halt' are on no account to be sounded by any regiment for the purpose of carrying out regimental details, but words of command only are to be issued.

"17. Infantry will never fix bayonets except when formed to receive cavalry.

"18. Villages with troops formed in front of them are to be considered as occupied.

"19. General officers will take care that all hurry and forced rate of marching is prevented; the movements should be made with the greatest deliberation, and order and regularity must be maintained. When troops are broken by circumstances of ground, or otherwise, they should be re-formed on the first opportunity.

"20. It is essential that the most economical use of ammunition should be inculcated and enforced. Regiments and batteries found to have made a profuse and indiscriminate expenditure must not expect to have it replaced.

"21. Railways are only to be crossed by the regular bridges and crossings.

"22. Firing near buildings or stack-yards should be avoided as much as possible, and every precaution taken to guard against fire.

"23. Great vigilance is required to detect and not to give weight to 'manœuvres,' such as too great extension of the line

for the purpose of surrounding, or the renewed attacks of troops already beaten.

"24. The probable effect of fire, especially of artillery, must be considered also, whether there is confusion or absence of confusion.

"25. Repeated attacks by the same body of cavalry are absurd and impracticable in real battle.

"26. The supposed destruction of bridges may be indicated by a flag, or by occupation of the bridges by a party of Engineers. The umpires will determine how long it will require to repair the bridges.

"27. When the 'cease fire,' 'halt,' followed by 'officers' call,' is sounded, officers commanding divisions and brigades will repair to the Umpire-in-Chief, and the troops will encamp, or wait for orders, according to circumstances.

By command,

"C. R. EGERTON, Major-General,

"*Deputy Adjutant-General.*

"*Aldershot*, September 15."

CHAPTER III.

"Tout général en chef qui se charge d'exécuter un plan qu'il trouve mauvais ou désastreux, est criminel."—*Napoleon.*

At the base of the moorlands upon which the 2nd and 3rd Divisions had pitched their camps runs the little river Wey, in a tortuous channel from west to east. It is spanned in that portion of its course with which we are concerned by four bridges, at Frensham, Tilford, Elstead, and Somerset. From these passages good but narrow roads, laterally connected, lead to Farnham, Tongham, Seale and Puttenham. The country through which they pass is cultivated or meadow-land, and the roads themselves are much concealed by the high hazel-fences with which they are fringed.

The first feature of importance which meets the eye, proceeding northwards from the Wey, is

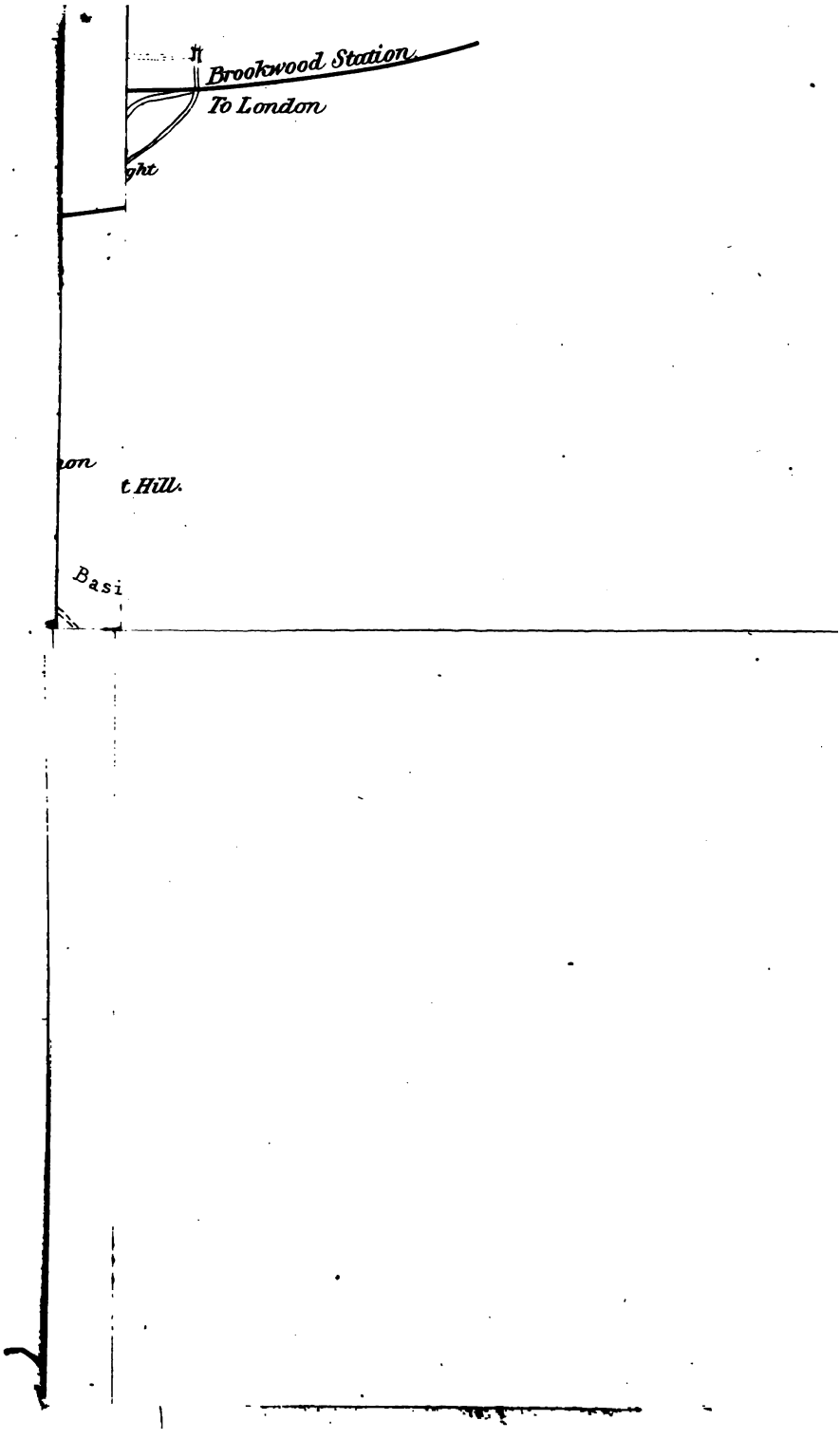
Crooksbury Hill, the advanced post of a series of singularly-featured ridges. This hill, which is commanding and thickly-wooded, is traversed by the roads which conduct from the lower portion of the river to Farnham and Aldershot, and covers the gap or break which separates the Hog's Back from Bricksbury Hill. A military force desiring to dispute an enemy's advance into this territory should post itself firmly on Crooksbury Hill; first, to defend the passages of the Wey, and, secondly, to hold the key to the approaches to the Farnham valley. Moreover, assuming that the outer roads on Farnham and Puttenham were more or less open, but that Farnham, Seale, and Puttenham were held, the character of the position is such that the invader would be forced to attack it with a view to his own safety. Unless he were in force so superior as to be able to act in equal masses upon both flanks, the prospects of the defender would be far from gloomy; and, if eventually compelled to give way, the ground in rear offers many facilities for local defence, under cover of which his army might be withdrawn.

The Hog's Back, to which our attention is next drawn, is a prominent chalk ridge, from four hun-

dred to five hundred feet in height, running in a straight line for seven miles due west of Guildford. Its southern face is scarped, broken, and studded here and there with villages; northwards it loses itself more gently towards the Ash Valley, but the slopes are still steep and difficult. The crest leaves space only for a single broad road, fenced right and left, forming the direct communication from Guildford to Farnham. The western extremity loses itself gradually about two miles before this last town is reached, and through the low ground the South-Western Railway finds its way, forking to Aldershot and to Guildford. This last branch assumes undue importance as a military feature, owing to the published regulations which direct that railways should only be crossed at regular bridges.* It will be noticed that it runs parallel to

* This order, which has been extracted from the "Prussian rules for avoiding accidents, disorder, and injury to private property" (Baring's translation, page 67), is scarcely based upon the original regulations. These add the following paragraph:—

"Those features of the ground which are avoided for reasons which only obtain in time of peace, are, however, only to be regarded as tactical obstacles when they would be so really during actual war; for instance, railway cuttings or embankments form real obstacles, but when the line runs along level ground, troops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and in rear of the Hog's Back, and that troops retiring worsted from that height would find three or four bridges, on a line of three miles, by which they might effect their retreat. In this same valley, by a further fork of the railway towards Ash and Farnborough, a second line has to be crossed before the roads which flank the Fox Hill are reached. Troops of all arms, turned or hustled off the Hog's Back, would thus find themselves confronted by a succession of defiles, which might, and probably would, involve them in a catastrophe.

But if they should succeed in reaching the village of Ash in security, they would have the option of continuing their retreat along the roads leading by Frimley to Bagshot, and by Pirbright to Chobham, or they might rally on Gravel-pit Hill, in order to cover the roads in rear, and challenge the enemy once more to action.

Gravel-pit Hill is the extreme southern salient of

are supposed to be able to cross it when deployed. A body of troops, therefore, which is crossing a line at a level crossing in some form of column is not to be considered as such a column in reality, and the umpire will not permit the opposing force to take special advantage of the loss of time occasioned by crossing a line, or of the peculiar formation which it is necessary to adopt in crossing it."

a line of heights running north and south, in a direction as nearly as possible perpendicular to the Hog's Back. The northern portion is known as the Chobham Ridges, the southern as Fox Hill. The range, with a mean altitude of 300 feet, is wooded in parts, but mostly open, the flanks riven, presenting salients and gorges alternately. Fox Hill, sufficiently bulky to form a broad, open plateau on its crest, is separated from the Chobham Ridges by a gap which has been turned to account by the Basingstoke Canal, and by the main line of the South-Western Railway. The course of this canal—an important feature—is peculiar. From Brookwood it finds its channel due west to Frimley Green, then turns abruptly south, along the base of the heights, resuming its original direction where these terminate. The canal is not considered fordable, and, as a glance at the map will show, is bridged only at a few points. It is clear, therefore, that the position on Fox Hill could only be assumed with a view to earnest defence, with a certain amount of risk.

If the enemy, after forcing the Hog's Back, should operate by Henley upon Pirbright, leaning towards the communications of the defender, as

would probably be the case, he might anticipate the latter on his line of retreat, cutting him from Chobham and Bagshot. Or, if such a course seemed preferable, having turned his left, he might attack him vigorously on his stronghold, driving him in case of success into the angle formed by the canal. On the other hand, should the invader, mistaking his interests, or over-elated by success, press on by Tongham in order to debouch from the defiles at Ash, his opponent might reckon upon repulsing him bloodily for his temerity, and, perhaps, succeed in turning the occasion to signal account.

North of the canal, on the east, a wide valley separates the Chobham Ridges from the heights which had been fortified by the defending force to cover the valley of the Thames. It is bisected by the Woking and Bagshot road. The western half is for the most part open, barren, and consequently without habitations. Towards Staples Hill the country is cultivated, thickly wooded, and dotted with villages. Here the gentle slopes form a fringe to the final position on the hill alluded to, affording advantage to assailant or defender, as either may know how to turn it to account.

* * * * *

On Friday, the 15th of September, the following orders were issued from head-quarters :—

"HEAD-QUARTERS ARMY CORPS.

"ALDERSHOT, *September 15th.*

"*Saturday, 16th.*—It is assumed that on the morning of Saturday, the 16th, the First Division (Defending force) having failed in intercepting the enemy's advanced corps (Second Division), and preventing its junction with the main body, has occupied a strong defensive position on the Hog's Back, his right being in the direction of Hungry Hill.

"The Division has been reinforced during the night by three batteries of artillery, and his right will for the day consist of a skeleton force of cavalry and infantry, representing 2000 men.

"The Second and Third Divisions, having effected their junction, and finding themselves in superior force, will make a combined attack on the position held by the defending force.

"The Third Division will attack to its front, and the Second Division will endeavour to turn the enemy's right by a flank movement.

"The senior officer of these Divisions will regulate the advance.

"The operations of the day must not extend beyond the Puttenham and Wanborough road on the left of the position, and the Beacon Hill on the right.

"The main bodies of the Second and Third Divisions will not move from their camping-ground till 8 A.M., nor are the outposts to be thrown beyond the positions occupied during the night, until that hour.

"By command,

"C. R. EGERTON,

"Major-General,

"*Deputy Adjutant-General.*"

The first impression made by the perusal of these dispositions would lead to the conclusion either that the author had failed to study the ground in question, or that his ideas of a strong, defensive position were vague and undefined. It seems superfluous to state that command is not the only qualification demanded of defensive ground. Yet the defender is assumed to have posted himself *on* the Hog's Back, and to be satisfied with the security thus afforded to him. Imagine 10,000 men formed on this bald and narrow height, with the artillery of the present day playing upon them. Further, the officer commanding the First Division is instructed to detach *in the direction* of Hungry Hill. Unless the purpose be to find a target for Carey's Division, which is ordered to "turn the enemy's right by a flank movement,"

the motive is simply unintelligible. Not only is a gap, two miles in extent, thus provided in the defensive line, but the right so formed and isolated is exposed to crushing attack. Lastly, the presence of Crooksbury Hill is nowhere alluded to, yet a single glance at the map suffices to indicate that the strong defensive position on the Hog's Back is absolutely valueless, unless this prominent feature is included.

But the author, not content with disposing for the defence, dictates the character of the attack to the Divisions acting on the offensive. "The 3rd Division will attack to its front, and the 2nd Division will endeavour to turn the enemy's right by a flank movement." Unless the object be to expend the superfluous force in hand by a stroke in the air, it is perplexing to understand on what grounds this flank was selected for attack. Where paramount reasons to the contrary do not prevail, the strategic flank* is that which first commands atten-

* For the information of non-professional readers, it may be explained that the strategic flank represents that which is nearest to the line of communications, or of retreat.

An army beaten off its line of retreat will soon find itself in difficulties, and the injury inflicted is often irremediable. No

tion. As Sir Hope Grant was defending the approaches to London, his line of retreat was in rear of his left, not of his right; and that flank, consequently, was the one which offered the best chances to the assailant.

But the point which attracts most attention in this extraordinary document, is the manner in which the orders issued by command of his Royal Highness the Commander-in-Chief, at the commencement of this same week, are absolutely ignored. By these "*the most unfettered control in the strategical and tactical handling of the troops committed to their charge*" was delegated to the Commanders of Divisions. This was entirely in accord with the spirit and object of the manœuvres, and with the example provided for us by our instructors. But now the sense of the earlier order is entirely set aside, and—unless the criticism applied is considered unfair—a production of very questionable military merit is substituted.

such results can be expected from an attack on the outer flank. The defensive army, if worsted, falls back upon the line which carries its supplies, material, and reinforcements, which will enable it in great measure to repair the consequences of defeat.

Proceeding to examine the execution of these dispositions, it will be seen by reference to Plan II. that Staveley, with the 3rd Division, had encamped by Brigades on Hankley and Thursley Commons; whilst Carey, with the 2nd Division, had pitched his tents round Frensham Great Pond.

For reasons which have not transpired, no definite commander was allotted to the *Corps d'Armée* which had thus been concentrated for offence.

The instructions briefly state "the senior officer of these (2nd and 3rd Divisions) will regulate the advance."

The character of the advance being defined in the orders, Sir Charles Staveley as senior officer, had little to plan as regards his own Division, still less for General Carey. This much, however, is clear, that his own dispositions were considerably influenced by the orders given to Carey to "turn the enemy's right" at Hungry Hill. This "right" is distinctly stated to represent a skeleton force of cavalry and infantry, 2000 strong. In how far the officer who regulated the advance is responsible for employing 10,000 men to deal with an isolated detachment of this strength, it is difficult to determine. Certain it is that Carey proceeded to obey

the Army Corps orders *au pied de la lettre*, by turning the extreme right of the force placed on Hungry Hill, and by employing both his Brigades, with his Cavalry Division, for the purpose.

Thus the Cavalry, with the 1st Brigade, leaving Frensham at 8 A.M., marched for Farnham Park, bearing away to the left for Beacon Hill.

The 2nd Brigade, making for Greenhill, moved across the railway to Farnham, and passing through the town, then took the high-road leading to Aldershot.

Staveley, evidently with a view to maintain his connection with the 2nd Division, directed his cavalry, under M'Mahon, without infantry, but with one battery of horse artillery, by Tilford Bridge and Waverley, along the main road to the railway-bridge, in the direction of Hale.

The 2nd Brigade of his Division marched by Tilford Bridge upon Crooksbury Hill.

The 1st Brigade crossed the Wey at Elstead, making for Seale.

The baggage, escorted by the 9th Lancers and one gun, was directed along the important highway conducting by way of Puttenham, across the Hog's Back, to Wanborough and Pirbright.

To recapitulate. Carey prepared to surround the force upon Hungry Hill with his entire Division.

M'Mahon, to connect Carey's right with Staveley's left; whilst

Staveley led his two Brigades straight against that portion of the Hog's Back which, presumably, would be occupied by the 1st Division.

If these movements fail to represent a true picture of war, it must in justice be said that they were strictly in accordance with the orders issued from Head-Quarters.

Meanwhile the Commander of the 1st Division had looked somewhat closely, apparently, into the ground it was assumed he had occupied. He found himself called upon to take up a position, five miles in extent, with 12,000 men. The position itself was disconnected,—a wide gap separating the extreme right, which was altogether *en l'air*, from the centre and left. That portion of it which was represented by the Hog's Back consisted of an elevated ridge absolutely without depth or cover. The only safe line of retreat was in rear of the extreme left, whilst the approaches for the enemy were precisely such as to conceal and favour his advance. The circumstances were certainly calculated to

render an old campaigner suspicious, and Sir Hope appears to have taken the alarm. Restricted by his orders, and in some measure, apparently, by considerations of force, to the line of the Hog's Back, he occupied this with one regiment of Cavalry—probably for outpost duties and patrols—one battery of Horse Artillery, and with two battalions from each of his brigades. The remainder of his force he held massed between Wanborough and Tongham, seeking connection with his extreme right on Hungry Hill, by small infantry posts in the intermediate villages. His intention seems to have been, after forcing his enemy to develope his attack, to fall back across the valley with his entire force, destroying the railway-bridges in order to obstruct approach, and then to take his stand on Gravel-pit Hill, which he had hastily intrenched for the purpose. The force posted on the Hog's Back, therefore, was simply in observation, calculated to check the enemy's advance, should he attempt to force the ridge, until the ultimate dispositions were effected. The detachment on Hungry Hill was left to its fate.

From the character of the dispositions recorded, it is clear that Staveley's right brigade would be

the first to come into collision. This ensued about half-past nine at Seale. The preliminary firing lasted some short time, but the general character of the defence was so feeble, that a push made by Staveley's advance placed him in possession of the village, and the retreat of Grant's battalions from the Hog's Back gave ample evidence of the instructions under which they were acting.

Staveley's left brigade had halted on Crooksbury Hill at the commencement of the action, without orders, uncertain as to its future direction.

M'Mahon was stretching vainly across the valley in his endeavour to effect the desired connection. Being unsupported by infantry, his march was delayed by the pickets of the 1st Division.

Carey, diverging with each step from the remainder of the line, brought his guns into action towards eleven o'clock. By noon he was master of the position, and then prepared to carry his force across the canal.

The commander of the attacking force had been present with his right brigade at Seale, and, we may assume, was somewhat surprised at his easy victory. The strong defensive position on the Hog's Back had been abandoned to him almost without a

struggle. Having literally obeyed orders himself, he could not but expect that his adversary would do so likewise. So he pushed over the ridge into Poyle Park, in time to see the last of hostile columns vanish amidst the foliage. Marching to his front he shortly reached the railway, where, the bridge being demolished, he found himself condemned to a calculated delay of one hour and a half. This time might have been utilized for reflection and examination. The circumstances certainly demanded attention. It must have been evident to those least initiated that Grant had not engaged more than two or three battalions, and half-a-dozen guns. Where was the remainder of his force? Why had he not brought it into action? What was the character of the ground beyond the railway? But pressing considerations of his own, apparently, diverted Sir Charles' attention from his enemy. So rapid had been his victorious march, that the Hog's Back separated his Brigades. Stevenson, as we have seen, halted at Crooksbury, waiting for orders. Eventually he moved off by his left, but he had fully three miles to traverse in order to regain his place in line. At last he debouched from Tongham, and the time

having expired, Sir Charles crossed the railway, when both Brigades moved upon Ash. In spite of the warning given by the flashes from Gravel-pit Hill, the principal column, dense and somewhat disordered, pressed onwards. Arriving at the base of the heights, in close formations without space to develope, it was saluted by a fire of artillery and small arms, which it was beyond the power of man to withstand. So severe and so distinct was the repulse, that, as far as the 3rd Division was concerned, it must have proved decisive. Nor was Carey's division within striking distance. The honour, therefore, of the day remained with Sir Hope Grant—but his retreat had been predetermined, in order to comply with the Control arrangements; so he fell back along the crest of Fox Hill, then across the railway and canal to Coldingley and Bisley, while Staveley following the eastern foot of the hills reached Pirbright, and Carey camped on Cove Common. (Plan II.)

* * * * * *

Making every allowance for a first essay, the result of this, the first day of the manœuvres, was eminently unsatisfactory. The feeling which pervaded military men was one of depression. It

seemed, that with the earnest desire on the part of every individual to do well, it was simply impossible to attain this end. It was clear to all that grave errors had been committed, though it was difficult to fix the blame upon right shoulders. Why had Grant abandoned the position he was supposed to defend? Why had Staveley so gravely committed himself at Gravel-pit Hill? Where was Carey's flanking movement, and why had its influence failed to make itself felt?

Grant abandoned the position assigned to him, because he deemed it practically indefensible. He could not foresee that the attack would be delivered in the form it took. He had no right to assume that 10,000 men would be directed against an outlying detachment, whilst his inner flank was menaced by a baggage-train. Carey having been originally withdrawn to Frensham, with a view to concentration, it was reasonable to suppose that his force would be turned to solid account, in which case the character of the position could not compensate for Grant's numerical inferiority.

Staveley, it appears, conceived that with the seizure of the Hog's Back his day's work was completed; and thus it came to pass that he pre-

sented himself within three hundred yards of his enemy's prepared position in column of march. From his bearing it would seem as though, beyond the published orders, he had private instructions in his pocket to march *en tout cas* upon Pirbright. If this be so, he certainly fell a victim to the evil genius who presided over this day's operations.

Carey's movement is simply incomprehensible. The instances are numerous in the history of war where generals have been called upon to fight, before their detachments could be called in; but that a commander purposing attack should divert half his force from the battle-field, surpasses belief. Clearly some sinister influence was at work on this first day of the campaign. Was it the "Control"?

CHAPTER IV.

"Die Theorie, oder die Aufstellung von Lehrgrundsätzen, muss mit der Praxis Hand in Hand gehen, ja die erstere muss auf die letztere—auf die Erfahrungen welche uns die moderne Kriegsgeschichte darbietet—gebaut sein. ('Taktische Folgerungen,' etc.)

"The limit of infantry fire is the commencement of artillery efficiency."—*Strange.*

SUNDAY being a day of rest, the troops remained on their camping-grounds, and the following orders were issued from head-quarters :—

"HEAD-QUARTERS ARMY CORPS.

"CONTINUATION OF GENERAL SKETCH OF MANŒUVRES.

"*Monday, 18th.*—The Second and Third Divisions will continue their operations, their object being to reach the valley of the Thames.

"The area of operations is restricted on the north by the London and Southampton road, and to the east by the Brookwood Station, London and South-Western Railway.

"By command,

"C. R. EGERTON,

"Major-General,

"*Deputy Adjutant-General.*

"*Aldershot,* September 17th, 1871."

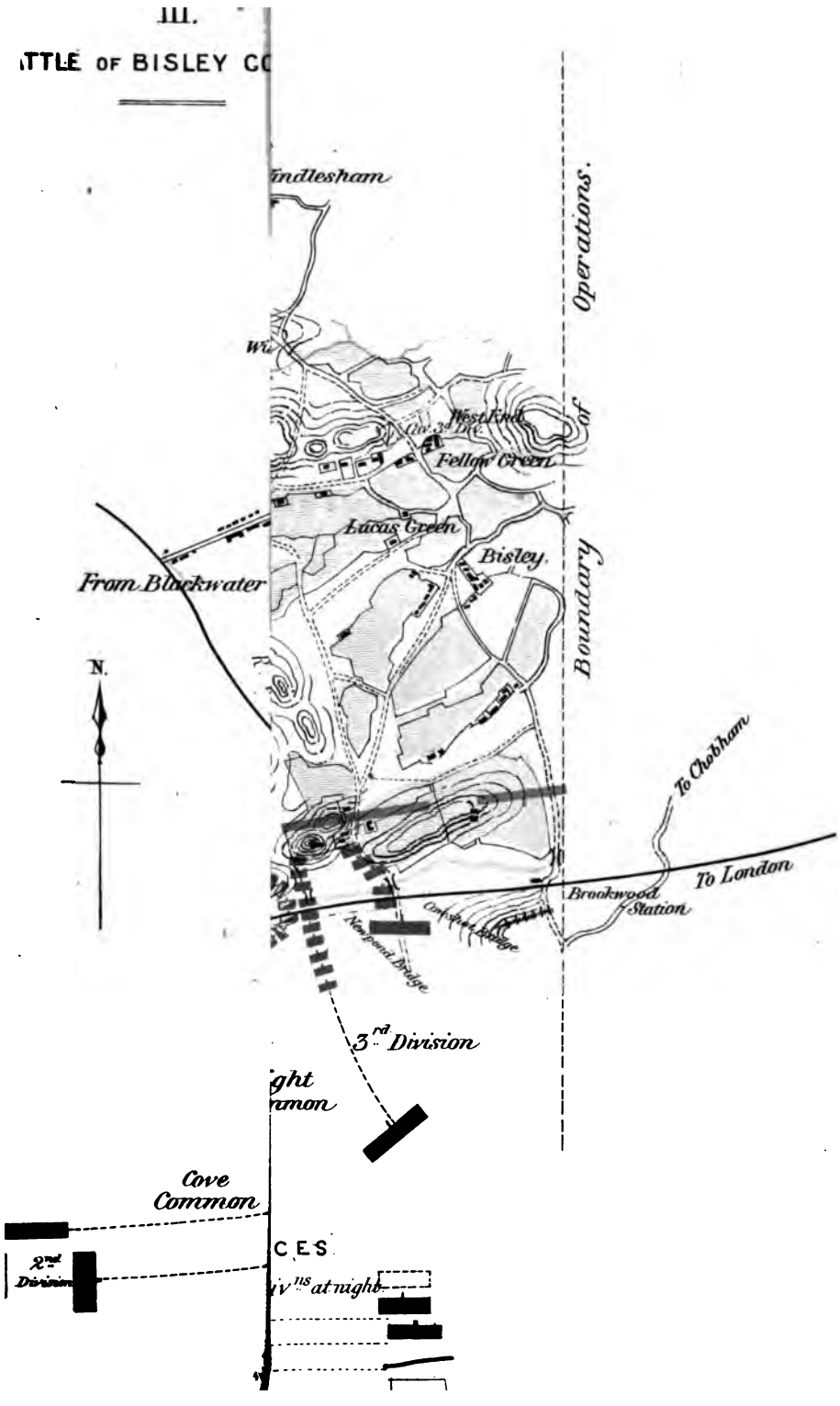
By reference to Plan III., it will be seen that the two divisions which constituted the attacking force had halted, on Saturday evening, at a distance of some six miles from each other. This distance was practically increased by the character of the intervening country. A glance at the General Plan will show that the South-Eastern Railway, Canal, and Fox Hill must be crossed, were closer concentration considered desirable. But the advantage of separated action, where similar disproportion of force obtains, on the one condition of concert, has been already shown. In the present instance, if Grant stood to fight on Bisley Common, the appearance of Carey's guns on Chobham Ridges would force him at once to abandon the intention. On the other hand, if, having penetrated the character of Carey's movement, he marched to meet it, a few strides in advance would place Staveley on the communications which were of vital importance to the Defence. Thus the attitude to be expected from each of the three commanders seems tolerably clear.

Grant, with a watchful eye upon his nearest adversary, would make early dispositions for retreat.

Carey, feeling towards his right, would march for the Ridges.

III.

ITTLE OF BISLEY CO



Staveley would temporize, with a view to admit of his colleague's approach.

Such would seem to be the ordinary view of the situation; and, had purely military considerations prevailed, the correspondents of the Press might have found little of interest to report. But in peace, apparently, as so often in war, separation does not imply concert, nor is action always the result of reflection.

In the orders for the day, no restriction as to the hour of movement appears, but it was generally understood to be the expressed wish of his Royal Highness that troops should not leave their encampments before eight o'clock. The point is important, because under these circumstances it would be impossible for Carey to appear in force on the fighting ground before noon. Thus Grant would have three good hours at his disposal, before he made preparations for departure. Staveley, on the other hand, could expect no active support until the hour stated above.

The position of this last General at Pirbright was somewhat peculiar. Little more than a mile of ground separated his camp from the defending army; but, short as the distance appears, the tac-

tical obstacles which intervened presented very serious difficulties of approach. For some four miles the railway and canal run here parallel, and close to each other. The former is carried along an artificial embankment sufficiently high to dominate the ground adjacent. This is pierced at intervals for purposes of ordinary communication, and on emerging from the tunnels the wayfarer is immediately confronted by the canal, the passages over which, in the present instance, had been destroyed. Thus it was necessary, if Staveley desired to grapple with his adversary on Bisley Common, first, to repair the canal passages, and, secondly, to debouch from the railway tunnels at Cowshot and New Pond. Now, assuming the operation to be unavoidable, the embankment was well calculated to assist its execution. Men and material could be massed in perfect safety close to the points where they would be required. But it has been argued above that this was by no means the case. Staveley's movement, from the character of the situation, was necessarily subservient to that of Carey. Were this not so strongly pronounced as appears to be the case, the tactical difficulties which presented themselves on Staveley's path must

have decided the question. The regulations, it will be recollected, restrict the use of railways to the regular crossings. The embankment, therefore, though it might be utilized with great advantage for infantry fire, was not available for artillery. A minute investigation of the ground had produced but one small spot sufficiently commanding to overlook the embankment, and that close to the boundary. The enterprise must therefore rely for support almost exclusively on infantry fire, whilst Grant, with an equal force of other arms in hand, had thirty-six guns at disposal. Now, the one great advantage claimed for the larger arm is its greater extent of range. So far as the effective fire of the breechloader reaches, its superiority must be unconditionally recognized; but from that line, far away in the distance, the action of artillery remains all-powerful.* It is precisely in such cases as the

* Let us hear what one of the shrewdest observers of recent warfare remarks on the subject of Artillery. He says,—

"Great as are the changes which have been effected in the Infantry arm, the alterations in Artillery are still more strongly marked. The improved construction of guns and gun-carriages, then the arrangements now made for carrying gunners with their guns, render the heaviest field guns of the present day as manageable as was Horse Artillery in the days of the Napoleonic

present—the defence of defiles—that its crushing force can be fully displayed. Thus tactical consi-

wars. But even this consideration is unimportant, compared with the range and accuracy of rifled cannon. Its range commands all that the eye can distinguish, and, the distance given, every larger object, a battalion or company, will be struck.

"There are attendant disadvantages: accuracy of fire of course demands deliberate and accurate aim; and the range necessitated by the range of the breechloader implies a trajectory which was unknown in the days of round shot. Further, shells are now almost exclusively in use, which on reaching their destination explode, producing circular effects very different from the razing action of the old round shot. Beyond this circle they exercise, as a rule, no influence whatever. A shell falling a few paces short, or over the mark, must be considered lost. The action of other projectiles is still more uncertain, inasmuch as they are dependent upon the action of the time-fuse as well as upon accuracy of aim. Modern guns are not charged with grape and canister as was the case formerly,—a disadvantage which is less apparent, inasmuch as Infantry fire at short ranges hardly now requires the support of Artillery.

"Glancing practically at the action of Artillery in the present day, it appears that guns on entering action at 1800 yards seldom incur immediate loss. Formerly this was the dangerous moment: as the drivers turned to bring the pieces round they presented a broad front to guns already in position; the distance was shorter, and an error in judging the distance less material, owing to the straight, razing character of the bolt.

derations of the last importance united with strategic motives in imposing upon Staveley the waiting attitude which had been assigned to him. "Hurry," says Tellenbach, the experienced writer already quoted, "costs blood, where a waiting game succeeds without loss of life. Do not ask from brute force what time and skill will place in your hands without it." The motives which led the victor of Millesimo to the assault of the Bridge of Lodi cannot be adduced on the present occasion. Grant's force was not demoralized, nor was Staveley really on the wings of victory.

It may be concluded, then, that the general situation was entirely favourable to the Offence, pro-

Now, owing to the handier character of the guns, and the difficulty of judging the distance accurately, the initial danger is enormously decreased. But this freedom from danger and loss does not last long. The explosion of the shell serves to enable the gunner to examine and rectify his error. Three or four rounds are quite sufficient to ensure the range.

"On this account guns are deployed at wide intervals with the best effect, for it is a difficult matter to hit a single gun at 2000 paces, however easy it may be to strike standing battalions, companies, houses, works, or villages shot after shot," etc. ('Gedanken und Betrachtungen über den deutsch-französischen Krieg.' Free Translation.)

vided it were not compromised by rash and untimely action.

This last provision offers the clue to the solution of the problem for the defending force. The numerical disproportion continued such, that the slightest want of caution on the part of Sir Hope Grant might expose him to severe defeat. The *rôle* to be played by the defence is always full of difficulty. Independent of the inferiority of resources which necessarily determines the attitude, the highest military qualities are required on the part of all concerned to enlist a successful issue. The one point upon which every one is agreed is to the effect that purely passive defence must necessarily lead to eventual ruin. It follows that opportunities, from which advantage may be drawn, should be carefully watched, and instantly turned to account. To this end it is essential, first, that the alternative action of the enemy should be clearly read, and, secondly, that the force at disposal should be held together in such compact form that it will be readily available for rapid action. For this reason scattered or partial defence has always been justly condemned. On Saturday Sir Hope Grant had kept this golden precept

clearly before him, and reaped his reward. On the present occasion the form of attack to be expected was more or less identical. Circumstances of time and ground differed, which necessarily influenced the immediate dispositions. Staveley stood in close contact with the defending forces, Carey was separated from them by a four hours' march. Staveley, therefore, must be directly met, Carey closely observed.

The Common upon which Sir Hope had pitched his camp is bleak and bare, but for military purposes it is full of interest. The folds of the ground are such that a much larger force than that which Sir Hope commanded might be entirely concealed from Staveley's view. Here and there, especially towards the canal, patches of cultivation present themselves, with hedges, trees, and a few isolated habitations. The passages by which Staveley could advance were necessarily restricted to two, separated by a short mile from each other. These might be entirely commanded by the overwhelming force of artillery which Grant could bring, unopposed, into play. With the power of converging the fire of eighteen guns upon each of the *débouchés*, he held the keys to Bisley Common from

the south in hand, to open or close the doors at discretion. During the hours of forenoon, therefore, his mastery over the situation, as far as Staveley was concerned, may be considered complete, and there was ample time to strike a blow of more or less severity against him. The character of the blow would depend entirely upon Staveley's initiative. The earlier that General moved, the more time would Grant find for the purpose, and the larger in dimensions might be the character of his enterprise. It might be quite consistent with his plans to offer little opposition to the partial development of a movement which he could limit at will. On the north bank of the canal the position of Staveley would be precarious in the extreme, unless he were certain of victory. If the issue from a defile in the teeth of a determined foe is fraught with difficulty, retreat after repulse is infinitely more dangerous. The glory of Aspern seems to pale before the calm determination which marred its results.

Starting from this ground, Sir Hope would find little difficulty in effecting the necessary dispositions. However imposing his position, as regards the 3rd Division, has been shown to be, it was by

no means free from elements of weakness with re ference to his more remote adversary. The communications leading from the south of the Common to Staples Hill are far from satisfactory for the rapid withdrawal of 10,000 men. On the other hand, when the Ridges were reached, Carey's batteries would command the entire valley below him. Thus Sir Hope's attention would first be directed towards the regulation of his communications with a view to safe retreat, and, secondly, to the close observation of Carey's movement. To this end, the bulk of his cavalry force might have been placed on the open plateau at Windmill Hill, in anticipation of a similar movement on the part of the 2nd Division. The system of signalling, so happily introduced, would keep him constantly informed as to the enemy's approach, and offer at the same time complete command over the detachment. The commander of his artillery, bearing the double purpose in view, would have selected the sites, and measured ranges, so that his guns could at once be moved to the positions assigned to them, and commence effective fire. Two or three battalions of rifles or light infantry would be thrown into the cultivated land, right and left, towards

the canal, and the mass of the infantry, irrespective of well-dressed lines, or old orders of battle, but with entire reference to its safety and concealment*—be kept in hand in the closest formation of which the ground would admit.

It cannot be too strongly urged that the day is past when the virtue of the soldier was alone displayed by his patient endurance in close formation under fire. The great art now is to preserve life, not to expose it to destruction, and whilst effecting

* Tellenbach says, "The importance of forming and posting troops according to the ground is especially evident with regard to the reserves. These should be so near that they can take part in the fight, and yet be kept out of fire as much as possible.

"A battalion, for example, in single companies—one in line, another in quarter companies, a third in groups—may be completely withdrawn from the view and fire of the enemy, while a battalion which persisted in remaining in some regulated close formation, would inevitably be destroyed.

"From these places of the reserve, the ground must be reconnoitred beforehand up to the troops in front, when protected approaches to the latter are often discovered, or may be improvised by the simple construction of a passage through a wall or hedge."

"The Reserve," considered as a military term, implies the reservoir from which troops are drawn according to demand, to feed the fighting line. (Author.)

this, to cover the avenues of approach with fire. In order to attain this end it is absolutely essential that the man should appreciate the principle as thoroughly as his officer, and that his individual training should bear exclusively upon the action which will be required from him in the field. The Prussians have already recognised that, far as they may be in advance of other nations in this respect, much remains to be done. The suggestion has been made that the art of skirmishing, which is now neither more nor less than the art of fighting,* should be learnt and taught in a course as distinct as that of rifle instruction or gymnastics. It is idle to urge that if the man is trained to preserve his life he will be reluctant, when occasion demands, to risk it. The mainspring of a soldier's action in the field is confidence in the skill, the care, the guidance of his leaders. The instant he recognises these great qualities, his own will is involuntarily surrendered. That he does recognise them, as well as the reverse characteristics, no one can doubt, and now, more than ever, his attitude in the field will be determined by them. It was the Danish campaign, unequal as the struggle was,

* *Vide* 'Taktische Folgerungen aus dem Kriege 1870–71.'

which illustrated to the Prussian nation the character of their military leaders. Bohemia endorsed the conviction, France has raised it to absolute faith.

Returning to the consideration of the operations before us, there is one matter connected with peace manœuvres which would seem to require consideration. It needs little reflection to understand that the duties entrusted to umpires are as exacting as they are important. An imperfect or incorrect decision will go far, occasionally, to undermine the value of the exercises. It is not meant that due care was not evinced in their selection; this was evidently the case. It *is* argued, that if a sound verdict is expected, the data should be furnished upon which judicial power can rely. How is it possible, for instance, truly to determine the influence of artillery fire, when the guns themselves are far away, and the object of their aim unknown? The phases of action are dependent upon local decision, and an umpire attached to a single Brigade, will hardly be in a position to realize the result of dispositions which may be altogether independent of the unit in question. It would seem necessary, therefore, that a sketch of the tactical dispositions should be prepared beforehand by the officers re-

sponsible for them, and handed to the umpires on the ground.*

It was stated at the commencement of the chapter that it would be difficult for Carey, starting at eight o'clock, to reach the scene of action before noon. His march, in truth, was one of considerable difficulty. There were two roads which conducted to the Ridges. The first would take him to Frimley Green, and thence by bad tracks, unless

* There is reason to fear that the suggestion may not find much favour if what Mr. Kinglake terms the "true native English dislike of all premature planning" has not diminished in force since the Crimean war. (Vol. ii. p. 241.) Those who have perused the well-known history will be mindful of the rough sketch which St. Arnaud handed to Lord Raglan on the eve of the battle of the Alma. Its character is such as to elicit from Mr. Kinglake a tribute of praise, due to the spirit of the drawing.

Infinitely more interesting than the sketch is the spirit of the disposition which the English General thought fit to ignore. It is precisely that which the Prussians have practised throughout their late campaigns, with such marked and decisive success.

If this is "premature planning," how should we characterize the military trips to Bohemia and Alsace initiated by General Moltke prior to those wars? The very essence of military success lies in forethought and foreplanning, and if the measure alluded to in the text would tend to invoke the close investigation of *terrain* which is now required, it might probably be introduced with advantage.

the *détour* by Frimley village were effected, across the open moor in the direction of Colony End and Windmill Hill. His march would here be necessarily confined to a single narrow road until the moor was reached. The second road conducted by the North Camp Station, across the South-Eastern Railway and canal at Deep Cut Bridge to Wharf Pond, where the South-Western Railway and the same canal again interposed. By a licence, legitimate enough in peace manœuvres, the bridges over the canal were supposed to have been destroyed by the defending army, so that delay would occur in preparing the means of passage. The question, therefore, presented itself whether one or both roads should be used, and the latter alternative was selected. Having struck his camp, Carey moved off by Brigades punctually at eight o'clock, but before the rear of his columns was in motion the booming of guns in the distance already made itself heard. The firing in question proceeded from a battery placed on a knoll on Windmill Hill, and directed against Staveley's battalions, which were forming for movement on the other side of the railway embankment at Pirbright. Possibly the fire in question may have precipitated this last General's

action, for, directing Brownrigg and his cavalry upon New Pond, he prepared at once to force the passage with Stevenson's brigade at Cowshot.

To meet this movement, Sir Hope Grant's dispositions had not been made in the sense expressed above. He appears to have stretched his line, not from Brookwood Station, but, by an error, from Brookwood Bridge on the left, towards Colony End on the extreme right, with a view to confront both his adversaries. The mistake made with regard to the boundary was important, influencing, no doubt, the attitude of the left Brigade. But if the conditions have been correctly sketched, the motives for covering ground so far to the right are not apparent. The only advantage which might be claimed from the disposition would seem to be that, from this form, more freedom for retreat would be attained when the time arrived for carrying it into execution. But if retreat were the sole object in view, there could be no possible use in assuming a formation which would be at once abandoned, probably with loss, when Carey reached the ground. It would have been more in consonance with reality, were this negative course decided on, to withdraw Prince Edward at once from the ground, leaving

Lysons to dispute the canal with Staveley. The object of these exercises is not display. The disappointment of sightseers cannot be considered an element in the game if permanent interest and value are to attach to them. It is upon this rock that the Volunteer reviews have foundered, to the satisfaction probably of all earnest men amongst them.

Owing to the fact that the instructions had been misread, Lysons, who commanded Grant's left Brigade, had directed his attention apparently in great measure towards his own left, anticipating that, if Staveley moved, he would utilize the Brookwood passage for the purpose. His dispositions, therefore, were made principally with a view to oppose this, as well as the passage at Cowshot. The *débouché* at New Pond would seem, to some extent, to have been overlooked. It resulted that a considerable portion of his Brigade with artillery was considered out of bounds, and neutralized accordingly. Moreover, the command offered to the assailant by the embankment for the development of infantry fire must have been under-estimated by the Defence. Certain it is that when Staveley commenced his operation, this was met principally, if not solely, by infantry fire. Had he been unable

to respond to this, it would undoubtedly, from its severity, have sufficed to mar his efforts. But from the embankment he swept the open ground where Lysons had posted his soldiers with missiles, whilst the guns in the cemetery rendered him good service. The decision of the umpire, therefore, that Staveley had succeeded in throwing his bridge was ultimately admitted, and his troops poured over the passage. A short delay would have rendered the justice of this decision more apparent. Brownrigg, whose action at New Pond was barely opposed, being without materials for bridging, was delayed for the time required for the operation. Debouching on the right flank of Grant's left brigade, he must necessarily have released Staveley from his difficulties when his troops were once brought into play. As it was, his advance harmonized nicely with that of Staveley, and their united action must have dealt severely with the few battalions left in Lysons' hand.

The manœuvre terminated therefore with the somewhat disordered retreat of this last officer towards Bisley village. Grant's right Brigade was never brought into action, and as it retired towards the Chobham road, Carey's guns thundered from

the plateau, which they had now succeeded in reaching. As the action had been decided before this last officer's arrival, he did not descend with his infantry from the heights, but continued his march along the crest to the camping ground, at Wishmoor Bottom, which had been selected for him.

Grant fell back to Staples Hill, and Staveley halted for the night on the ground he had won at Bisley.

* * * * * *

Once more the character of the orders issued from head-quarters invites attention. First, the 2nd and 3rd Divisions are instructed to continue their operations; but not a word is said with regard to the command of the two divisions. We are left to assume, either that the senior officer would still regulate the advance, as on Saturday, or that each Division would operate independently of the other as we may feel inclined. The peculiar distribution of the forces taking part in these manœuvres has already formed the subject of various comments. It may, or may not, have been suggested by considerations connected either with the camping-grounds or supply; but there is no sound reason why the value of the exercises, as such, should be

impaired by it. It renders, no doubt, the problem for the defence much more difficult to solve, but it tends equally to illustrate how military operations should be conducted, whether with superior or inferior force. Thus, the earliest lesson to be gathered from the campaign is that, where two divisions operate against one, the command should be held by an officer entirely independent of either. If this is not the case, the occasion will either be met by vagueness similar to that expressed in orders on Saturday, or the divisions will act without concert or harmony, as was the case at Bisley.

Further, the object of the operations is declared to be, "*to reach the valley of the Thames.*" But in the succeeding paragraph, "*the area of operations is restricted on the north by the London and Southampton road, and to the east by Brookwood Station.*" The first part of the restriction would render it impossible either for Carey or Staveley, marching to their front, to reach the valley which was to constitute their objective. The latter portion is so insufficiently worded as to invite error. How could the area of operations be restricted by the block of buildings which constitute the Brookwood Station? The London and Southampton road presents a

definite line which is perfectly clear and intelligible. But at Brookwood Station, if the letter of the order were followed, the area would be restricted eastwards at that point only, north and south of which it would be unlimited.

Attention is directed to the point not from any spirit of hypercriticism, but as indicating the extreme importance of accuracy of thought and writing, in issuing orders for military operations. In the present instance the consequences were certainly not grave, but quite sufficient to produce irritation on the part of the officer concerned. In war it is otherwise; it was owing to an error of the kind that Gablenz suffered so severely on the day after his victory at Trautenau.*

But apart from the actual wording of these instructions, the objective assigned to the 2nd and 3rd Divisions—"to reach the valley of the Thames" —seems unusual. When hostile armies are so closely in contact, and one of these is similarly superior in force, the object of its commander will be to attack

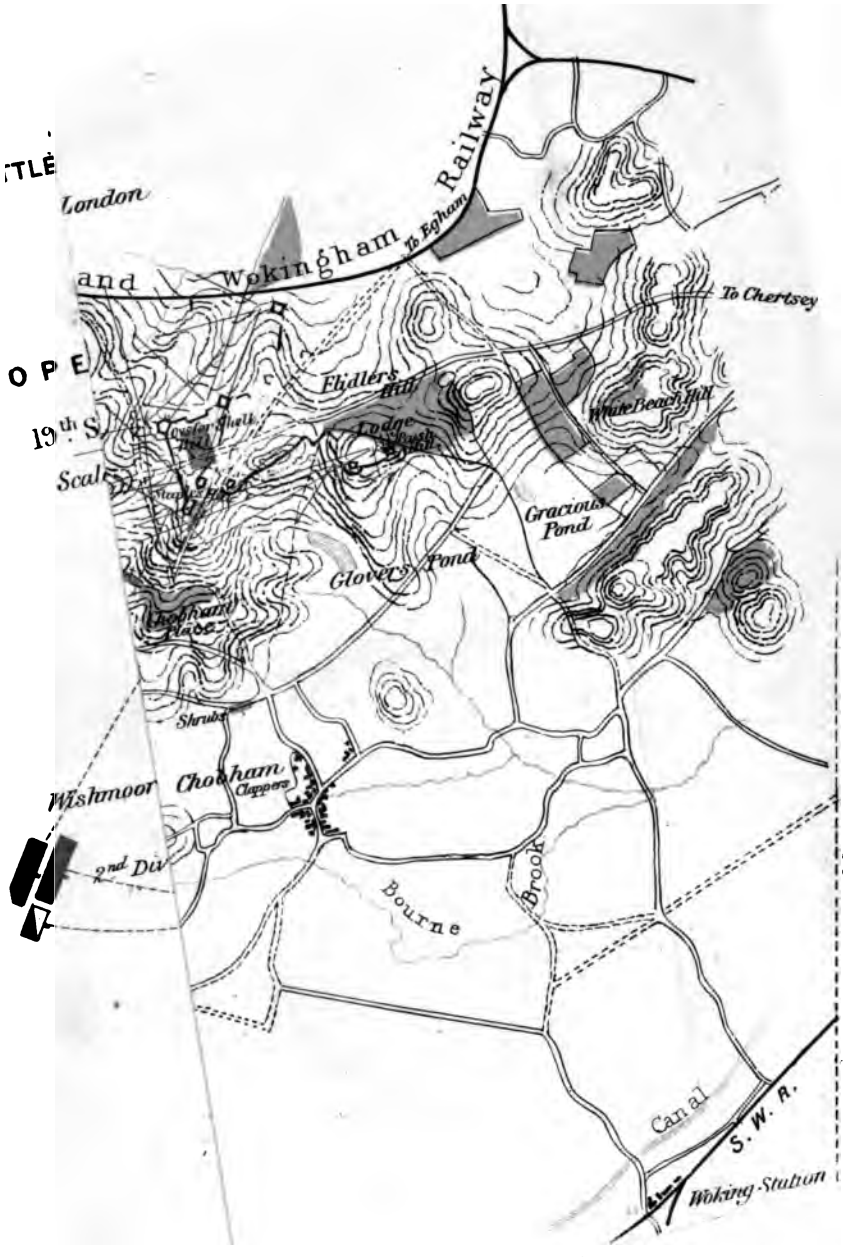
* Prussian Official Account of 1866, vol. ii. p. 163.

Colonel von Verdy, of the Prussian staff, devotes several pages to the consideration of this subject, in his 'Studien über Truppenführung.' (Author.)

and destroy the inferior force before him, in which case the valley of the Thames, or any other valley within reach, would necessarily fall into his possession. But then, again, the Metropolis would be the prize, and not the valley of the Thames, which is simply an avenue leading to it. Thus the proximate and ultimate object is altogether lost sight of, and an intermediate purpose unnecessarily interpolated, which really possesses no value. The correct conduct of peace manœuvres is by no means an easy task. Let those who dream that it is, study the regulations which have been framed after many years of experience in Prussia, and recollect that these are over and above the demands made on actual service. The distinct purpose is to present a picture, at any cost of time and labour, representing as closely as possible actual warfare. Without special training on the part of responsible officers, this end cannot be attained. How can a copy be produced, when the original has not been studied? The preparation required is not found on the parade-ground, or in the office. If other arguments were wanting in its advocacy, this one would suffice in favour of a permanent amalgamated Staff, that military operations in future can never be properly conducted in its absence.

The manœuvre of the day had presented an attractive spectacle on the open undulating heath. The strategy was not exposed, and the grandeur attending military display could not but impress favourably.

The officer who suffered from public criticism was he who had done least to deserve it. The attack had been rash and ill-advised, the defence feeble and unfortunate, but Carey had neither attacked nor defended. He had marched, and that as fast as the legs of his soldiers would permit him. Nevertheless he earned thus early in the campaign the not inglorious title of Fabius Cunctator.



Boundary of Area for Manœuvres.

Vincent Brooks Da

CHAPTER V.

"Tant qu'on voudra attaquer de bonnes troupes, comme les troupes Anglaises, dans de bonnes positions, sans reconnaître ces positions et s'assurer si on peut les enlever, on me conduira des hommes à la mort en pure perte."—*Napoleon.*

"Il n'y a point d'ordre naturel de bataille."—*Id.*

If the reader will trouble himself to examine Plan IV., he will notice that from the Bagshot and Chobham road the ground ascends until it eventually culminates in a line of heights called the Fox Hills. This position, the last within the Boundary, extends for a distance of fully three miles, from the Bagshot and Sunningdale Road, by which it is flanked on the west, to Flutters Hill and Gracious Pond, eastwards. The front may be traced by a line drawn through Windlesham and Westley Green to connect the flanks, whilst the Staines and Wokingham railway in rear completes the quad-

rangle. The entire tract or heath contained within these boundaries is open, but its features are very strongly marked and peculiar. For purposes of description, it may be divided into three parts. The first, starting from the right at King's Hill and Pib's Hill, stretches to Fox Hill, the second includes the ground between Fox Hill and Staples Hill, the third extends from Staples Hill to the extreme left, resting on the Chobham and Chertsey road. The hills on the right are commanding; they overlook the interior of the position, as well as the communications leading from Bagshot and Sunningdale, and from this flank the elevations subside gradually and regularly towards the left. An assailant entering the plateau from the former quarter would thus derive decided advantage over the defender in the use of his artillery, a consideration which renders it advisable to occupy this ground in force. Its extent, as well as the nature of the communications at the invader's disposal, would necessitate the employment of a Brigade at least for the purpose. This represented one-half of the force under Sir Hope's orders, so that one brigade only remained to cover the other two-thirds of the position.

It will be recollected that the invader was

making, in the first instance, for the valley of the Thames, in order "to turn the strong positions between Reigate, Dorking, and the Hog's Back." Renouncing his earlier strategic principles, he now proposes direct attack. No continuation of the "sketch" announces this determination, but in order to prevent him from shrinking at the last moment, his operations are silently restricted northwards, by the Staines and Wokingham railway; and the territory beyond the left flank of Grant's position is neutralized. Aiming, therefore, at the same objective, his purpose could only now be attained by traversing the heart of the defensive position at Staples Hill. On this salient spur, which is projected from the main ridge towards the proper front of the position, the roads leading from Bagshot and Chobham to Chertsey and Egham in the valley of the Thames meet, and cross each other. The approaches by which attack might be delivered were thus three in number; on the right, by the roads leading from Bagshot by Windlesham and Sunningdale, debouching on the heath at Pib's Hill and King's Hill; on the centre, by the roads which converge from the south upon Westley Green and Chobham Place; on the left, by the

Chobham and Chertsey road towards the ponds shown on the low ground. All of these approaches are more or less screened from view as they wind through the pretty coverts towards the heath; especially towards the front of the position at Westley Green the ground is closely wooded. As this was an advanced post of great tactical value in case the enemy should attempt to debouch in force against the centre of the line, it would again absorb a large proportion of Sir Hope's reserves. If we consider that the enemy in this case might penetrate almost without opposition on the left, that the only practicable lines of retreat were from Staples Hill, and further, that the Brigade employed on the extreme right was fully a mile and a half distant from Staples Hill, where the focus of resistance must be necessarily sought, it is evident that Sir Hope was charged to solve his problem with very insufficient means.

An effort was made to remedy this circumstance by calling in the aid of the engineer. From its peculiar shape a double face is presented by Staples Hill, towards the open moor away to the right, as well as towards the lower grounds on the left. By erecting and arming works on either flank of the

salient, approach might thus be rendered difficult from both quarters; on the other hand, the projecting angle, already much exposed, from its proximity to the wooded skirts of the Common, would be left comparatively undefended. To obviate this defect it was necessary to enlist other features of the ground, and Lodge Bush Hill, with Flutters Hill, were skilfully selected for the purpose. In the accompanying sketch, the endeavour of the engineer to concentrate his fire, more especially against the centre and right, is clearly apparent, and his purpose of denying approach on these points until his guns are silenced seems successfully asserted. On the other hand, the left appears comparatively open, as though time or material had failed, or attack from that quarter were not anticipated.

It will be observed that the great defect of the position was its want of connection. In point of fact there were two positions to be defended, not one, and that by a force not more than sufficient for the effectual defence of either. Its faultiness becomes still more apparent if it is kept in mind that the line of retreat is considerably nearer to the centre and left than to the right, and that con-

sequently the right Brigade must inevitably be compromised if the line were forced on either of the former points. Sir Hope, therefore, was on the horns of a dilemma: either he must abandon vantage ground to his adversary, which would probably entail his speedy withdrawal from the contest, or he must stand to fight, with the conviction that defeat would be tantamount to ruin.

Under such circumstances the plan of attack would seem tolerably clear. But it will be seen at once how necessary it is, where every kind of problem must be solved in the field, to command the information upon which reliable calculations may be based. It is not on the eve of battle that this can be obtained; there is one agency, and only one, upon which a commander can permanently rely, and that is a thoroughly trained and specially instructed Staff. It is through this channel that ground is studied in advance, force estimated, and organization mastered It is upon these data that a plan of campaign is projected, or the form of an attack determined. Without them everything is left to chance. It is quite true that we have kept the field with credit and success, without a permanent Staff. But that was at a time

when military art was infinitely more simple than it now is. It is useless to struggle against the conviction which presses with such force upon us. If other nations have raised warfare to the science which it now certainly represents, we must bend to the necessity, and accept the labour it entails.

It will be recollected that Carey had moved off to Wishmoor Bottom for the purpose of encamping on the preceding evening, and that Staveley had pitched his tents on the Common about two miles to the west of Chobham. The Divisions were therefore favourably posted with reference to the contemplated attack upon the defender's position. A short morning's march would bring Carey into collision with Grant's extreme right, whilst Staveley in his camp was again within easy striking distance. He might march with both Brigades upon Westley Green and Staples Hill direct, or, leaving a few companies in the woods on his enemy's front, might carry his Division under cover round to the extreme left, in order to launch it against the entrenchments on Lodge Bush Hill. In either case the one point essential to success was the carefully concerted action of the two Divisions. Where similar superiority of force obtains, this by no means

implies the anxious care for establishing close communication. It means the recognition on the part of those concerned of the best means towards a common end, and the hearty union of effort to effect this. It includes considerations relating to time, to the possible reinforcement of one unit at the expense of the other, and to the careful distribution of arms according to the nature of the ground. To this end a responsible supervising head is clearly necessary, and the value of the Corps d'Armée in army organization, as opposed to the Division, with a view to this aim, seems sufficiently established.

Staveley selected to move with both Brigades by Clappers and Shrubbs upon Westley Green, and, in accordance with the principle adduced above, the cavalry, finding no field for action on the front, was sent to reinforce the 2nd Division at Sunningdale. As his colleague had a short march to perform before he came into action, Staveley now awaited his approach, but, before his own Brigades had completed their concentration firing was heard from the direction of King's Hill, announcing that Carey was already engaged.

That officer, moving early, had directed Max-

well's Brigade upon Bagshot and Windlesham, whilst Smith took the road leading through the woods to the left of Bagshot Park, debouching ultimately, in the direction of Sunningdale, into the London and Southampton road. His columns, feeling towards the points indicated, soon came under the enemy's guns, and the action commenced.

Prince Edward of Saxe-Weimar, who commanded on this part of Grant's line, quickly perceived the necessity of reinforcing his outlying posts, and by degrees became engaged with his entire Brigade.

Lysons meanwhile held Westley Green, and a small force was kept in reserve within the line of redoubts.

Some short time elapsed before Staveley brought his men into action, but the fire of his skirmishers was no sooner heard than the inherent vice of the position made itself felt. The order for the retreat of Prince Edward went forth, so he withdrew from the ground he had hitherto successfully held, retiring upon the entrenchments at Staples Hill.

Enabled thus to debouch, Carey proceeded to form his order of battle. In front, a dense line of skirmishers pushed briskly through the heather; at

an interval of some two hundred yards his battalions, deployed in long, close lines, toiled slowly and painfully over the open but broken surface; in rear followed the Reserve, in columns of battalions. His cavalry was massed on the extreme left, and the artillery supported the advance from the commanding heights, which have already been described. Nothing could have been better in accord with prescribed regulation; nothing less consistent with the latest forms of battle, or the tactical necessities of the case.

The movement, successfully pushed to Fox Hill, reacted upon Lysons, who, releasing Staveley from the crowded lanes in which his columns were packed, fell back, in concert with his colleague, in order to effect dispositions for receiving the impending assault within the line of entrenchments.

Staveley then, forming on the Green, connected his own left with Carey's right, and, assuming the same order, continued the general advance.

It is needless to pursue the course of this memorable manœuvre further; sufficient to state that every indication points to the fact that the dispositions had been generally pre-arranged, and the result predetermined. Two fronts of Staples Hill

were swept by the art of the engineer with devastating fire,—the assailant voluntarily conducts his soldiers to illustrate by their destruction the results of his enemy's skill. The moor is open, and the attack exposed to every kind of missile; formations are adopted such as to render these surpassingly fatal. One flank of the position, from contingent circumstances, must necessarily be weak,—precedence is given to that point in which the essence of the defence is contained. On the whole, the representation partook of the kind suggested by a *grand coup de théâtre*. The spectacle was imposing; the excitement, as the long red lines approached the entrenchments, intense; the disappointment, when the issue was wisely deferred, keen. As a sight it was grand and enjoyable; as a preparation for the field it was worse than valueless. It was calculated to convey impressions which are not real, and to confirm prejudices which are based upon ignorance of present warfare.

There are points, however, connected with tactical considerations which may be usefully examined by the light of this manœuvre. The first of these is, in how far it may be deemed desirable, under conditions of force similar to those under discussion,

for the assailant to separate with the purpose of delivering attack upon both flanks of the defensive line. Most older writers on tactics agree on the value of flanking, as opposed to frontal attack, but none are willing to advocate the concentric form, except under circumstances of numerical superiority where neither of the separated fractions can be exposed to disadvantageous action. This was precisely the case in the present instance, for, as both Carey and Staveley were equal in force to the defensive army, they could only derive advantage from the fact of Sir Hope vacating his entrenchments to act offensively in either direction. The danger of counter-stroke under such circumstances is simply imaginary. On the other hand, the advantages derived from such a course are apparent. If the position of the Defender, as in the present case, is too extended for sufficient occupation at all points, the weak locality will soon be detected, and entry effected accordingly. At the same time, more especially in a close country, the superiority, which should prove decisive, will at once be turned to account. The moment is opportune for pointing to the subject, inasmuch as in their late wars the Prussians, whether in strategic or in tactical operations, have freely

committed themselves to those very manœuvres which have hitherto been considered faulty and hazardous. Thus Lecomte, criticizing their operations in Bohemia in 1866, considers that for four days during their invasion of that territory they were marching on the "brink of an abyss." In the teeth of such criticism the strategic manœuvre was repeated with like success in 1870, and the Duke of Würtemberg assures us that all their tactical engagements—with the exception, perhaps, of Gravelotte—were fought on the same principle. He compares their form of attack to a pair of tongs or nut-crackers, in their endeavour by enclosing, to crush their adversary. Two circumstances, no doubt, have induced the Prussian leaders to disdain the lessons which Napoleon had impressed so strongly upon their fathers. The first of these is, that the purely defensive value of the breech-loader, more especially behind entrenchments, is such, that generals acting on the defensive will be reluctant to quit their vantage-ground for more precarious enterprise. The second relates to the accurate estimate of this same power in the hands of their own infantry, for the purpose of averting possible counter-stroke. But in this, as

in so many other cases which have preceded it in history, the value of the form is only retained until the means of opposing it have been successfully thought out. In spite of the many changes which have taken place since they were written, the words of Clausewitz are still so appropriate, that it is impossible to avoid the quotation. He says* in his chapter on the tactical relations of Attack and Defence:—"Glancing at the course of modern warfare, at the commencement, *i.e.* during the Thirty Years' War, and the War of Spanish Succession, the deployment and formation of an army was one of the principal features of a battle. It was the most important part of the plan of battle. This, as a rule, offered great advantages to the Defender, inasmuch as his army was already in fighting array. So soon as the manœuvring capacity of armies increased, this advantage ceased, and the assailant for a time derived the benefit. But soon the Defender sought security behind rivers, in defiles, and upon heights. By this means he again asserted marked superiority, which lasted until the assailant had acquired sufficient flexibility and motive power to venture upon enclosed ground, and to operate in

* Book vi. p. 130.

separated columns; in a word, to *turn* his enemy. This led to the constantly increasing extension, which impressed the necessity upon the assailant of concentrating at one or two points, in order to break through the thin line opposed to him. Thus for the third time he succeeded in making his superiority felt, and the Defence was compelled once more to alter its system. This it has effected in the latest wars. The endeavour now is to keep troops in large masses together, undeveloped, and, if possible, concealed, prepared to oppose the dispositions of the assailant, so soon as these were sufficiently exposed."

Strange as it may seem, the Duke of Würtemberg points now once more to the necessity of extension on the part of the Defence, in order to avoid the turning attacks which the Prussians have lately executed with such marked success. Whether in that case "concentration at one or two points in order to break through the thin line," will be resorted to now that the breech-loader is in use, remains to be seen.

During these few days of military exercise nothing was more apparent than the cumbrous character of the close battalion formations. It is generally con-

sidered that the intersected character of our own country would offer marked superiority to the Defence. This is clearly wrong. The value of each defensive position in turn, whether on the Hog's Back, at Fox Hill, or Staples Hill, was seriously impaired by the facilities offered to the assailant of covered approach. The difficulty is, under such circumstances, to recognize the real from the false attack. No doubt the close character of the country might be utilized with success to impede advance. But this, again, is entirely dependent upon the adaptation of proper formations, as well as upon the individual training of the soldier. The more intersected the face of the country, the greater is the difficulty of manœuvring or fighting upon it; and that army will derive the advantage which, thanks to its formations and training, possesses most flexibility and "Apell."* For this reason the introduction of the company column, and the transformation of our battalions for fighting purposes,

* It is significant enough that there is no word in our own military phraseology which conveys the meaning of a term which is constantly in use in the German armies.

The necessary departure from the old close order of fighting has rendered it expedient to demand from the individual soldier

seems imperatively called for. If other arguments were wanting in its advocacy, which they are not, the following consideration would alone seem sufficient. The destructiveness of defensive fire is now such, that the one object of the assailant, in approaching occupied ground, is to find cover during his advance. To this end the Prussians have invariably sought and utilized the woods which they found on their adversary's front. Thanks to careful instruction and training, they constantly asserted their superiority in this description of fighting. But it will be seen at once that a battalion launched into a wood would pass rapidly out of the hands and supervision of its commander. Unless its further direction should then be deemed unnecessary, it is clear that the reins which slip from the one hand should drop into another ready to receive them. It is equally certain that this result can only be attained by early recognition of its necessity, and by careful preparation during time of peace. It is

an amount of vigilant attention, with a view to his guidance in action, which was previously not required, and consequently unknown. If the simile were not objectionable, it might be compared to the command exercised over a wide-ranging sporting dog.

often urged that where exigencies are felt in the field, the changes required will soon be forthcoming. Impossible to harbour a more destructive delusion! The value to an army of a thoroughly digested fighting system, as opposed to one of recent introduction, has often been illustrated, and cannot be overrated. It is upon forecast, not upon afterthought, that military success depends. Where are we to look for this, if not from the constant and vigilant observation of competent men, duly turned to account? Our own army teems with individuals able and willing to do the work. Their experience is recorded in the journals of every institution, in the pages of periodicals, in the columns of the Press. But their efforts are desultory, without order, without concert; the fruit abounds, but there is no one to gather it together.

The prevalent opinion that, by the introduction of more destructive arms the Defence has gained so enormously, will have the effect, no doubt, that field-works in future will constantly be resorted to by generals impressed with that view. It is important, therefore, to consider in how far this expectation is soundly based, and whether the attack of defensive positions is now really a matter of such surpassing

difficulty as some have imagined. From the study of the latest war, there is reason to believe that, with one condition, the query may be negatived. If the assailant is—as he should be—superior in artillery, he will probably derive greater advantage from its action and support, provided he know how to use it, than has ever hitherto been the case. Under the influence of the Bohemian victories, gained exclusively by Prussian infantry in the teeth of a superior artillery, attention has been disproportionately concentrated on the smaller arm. The power and value of artillery fire had not been fully realized even in Prussia. It was not until the war of 1866 had been brought to a close, and the deficiencies in the tactical use of the arm had been recognized, that the guiding spirits of that army took the subject up. Recognizing that war with France was simply a matter of time, and that their own breech-loader would then be opposed by an infantry arm of at least equal class, the use of artillery for purposes of offence was now closely studied. The result was, that after the first actions in 1870, the Prussian artillery had asserted a superiority over the French, almost as marked as was that of the breech-loader over the muzzle-loader in 1866. This was due to the fact,

that the French, fascinated by the extraordinary results in Bohemia, had based their tactics for the future upon considerations principally connected with the experience of the breech-loader in that campaign. The more intelligent officers of the French army stated boldly in their *conférences*, and elsewhere, that the days when *élan* alone sufficed to enlist victory were past. But in common with others, in other lands, they jumped to the opposite extreme, judging that the value of the breech-loader would be best asserted from a defensive position. The power of offensive fire had not been realized. It had been omitted from calculation, first, that the effect of artillery fire is fully felt from a distance which the rifle cannot command; secondly, that the action of artillery against moveable, as opposed to standing objects, is now infinitely uncertain; and thirdly, that in the hands of a well-trained soldier, the offensive fire of the breech-loader is very slightly inferior to that claimed for it by the Defence. On the other hand, it will be remembered that, in entrenched positions similar to that under discussion, guns and men must necessarily be packed more or less densely within the enclosed works. The result is that a diverging fire

will generally be opposed by the Defence to a converging fire on the part of the assailant, who without any detriment to his own fire, and with infinitely more security to his men and material, may disperse his batteries and extend his infantry.

These points are already clearly brought out through a variety of channels.

In an admirable lecture on the subject of "Practical Artillery," delivered in the United Service Institution, last February, Captain Strange, R.A., adduces the important changes which have been effected in modern artillery. His observations are the more valuable, as they all tend in the direction of utilizing artillery for offensive aims.

The author of 'Thoughts and Observations on the Franco-German War of the Years 1870–71,' says,—"The German artillery has proved in this war its terrible, and, under favourable circumstances, irresistible power; but with very few exceptions its fire has been directed against a motionless enemy; and where, as at Belfort, it served for purposes of defence alone, the offensive action of the assailant was far from formidable. The last war has offered no evidence of its capacity for resisting determined and vigorous attack. This much is already ascer-

tained:—*Artillery serves the assailant better than the defender, or, in other words, it will do more damage to the standing defender than to the moving assailant.*"

In a little work,* translated by the Professor of Military History at the Royal Military College, Captain Laymann has written a chapter on Attack and Defence which well repays study. After analysing the advantages claimed for either form, he adds,—"These few remarks may suffice to show that there is something to be said in favour of the Attack. It is essential to cultivate and cherish the preference for offensive action in the army. It is its very principle of life. Without it there is no energy, no victory. Only, the principle must not be applied in the blind unthinking way in which the Austrians tried to apply it in 1866. On the contrary, the advantages which belong to the Attack and Defence respectively, must be appreciated with equal clearness and intelligence."

The sum and substance of these remarks is, that it remains a very open question at present, whether

* 'About Tactics.'

the Defence has not lost rather than gained by the increased range and accuracy of the firearms now in use.

This much, however, is certain, that if the system of an army still admits of an order of battle suited to the actions of the Seven Years' War; if the only formations at the disposal of divisional leaders are line and columns of battalions, and if with these the attempt is made to carry entrenchments, or defended positions, by assault *pur et simple*, the consequences entailed by the neglect which has permitted such a state of things to come to pass, will be of the gravest character—fraught with death and disaster.

The question, however, will be justly asked;—inasmuch as the assailant will undoubtedly be called upon to approach and attack positions which have been prepared and occupied, how this is now to be effected? The evidence which has already been adduced from various sources on this head, is sufficiently suggestive. In the first place, since cover is indispensable to approach in order to avoid destruction, and as the varying features of the ground do not suffice for the protection of larger bodies of men, it is essential to introduce such smaller manœuvring units as can adapt themselves to the exi-

gencies of *terrain.* It is not in our power to alter the features of the ground; it is easy and natural to change our formations. Second in importance is the direction given to attack. Again and again it has been shown that the flank of an army in position must necessarily be its weakest point; that, consequently, should constitute the objective of the assailant. To oppose strength to weakness, whether in strategy or in tactics, must always remain the guiding principle; the means by which it is put into practice being dependent upon the skill, the knowledge, and, above all, upon the character of the individual. Assuming that the formations are at hand, and that the attack has been successfully pointed, the assailant is next called upon to bring his arms into play. In order to do this effectually, it seems imperatively called for that the leaders of the future should be intimately acquainted with the character of the resources at their disposal. It is not sufficient to have studied the action of one arm only in order to conduct military operations. These are dependent upon the combined action of the different branches, and that army will henceforth claim victory where this art has been best worked out. If this can only be effected by a permanent,

diligent Staff, and if, to be duly qualified, responsible officers should, as in Prussia, emanate from that body, what will be the prospects of an army in which no permanent Staff exists, and where, consequently, system and leaders are equally deficient?

To resume, on entering action the earliest *rôle* devolves upon artillery, from its greater range. To develope the full and timely power of this arm in a modern sense, is of itself a sufficient study. Excellent as the material of our artillery is justly estimated, its tactical deficiencies soon made themselves apparent. An order, therefore, was issued from Head-Quarters* offering more independence of ac-

*Memorandum relative to the Employment of Horse and Field Artillery.

General officers commanding divisions or detached brigades should indicate to the officers commanding artillery under their orders the general object of the movements about to be executed, and these officers would give direction to the captains of batteries as to the best mode of co-operating with and supporting them.

Officers commanding batteries should be permitted, under the direction of their own commanding officers, to use their own judgment in selecting the best positions to enable them to operate with advantage either in covering an attack or retreat, —conforming, of course, as much as the nature of the ground

tion to the commanders of batteries. Nothing can better indicate the expectant attitude of the army, than the general recognition with which this order was welcomed, and it may be left to effect its salutary results. It is only remarkable that the same spirit has not been extended to infantry; yet the guidance of that arm in action is now quite as difficult.

We are told by competent observers—and all agree—that at a distance of 1600 yards loss is already experienced. Where cover is at hand troops are still kept together, for the value of close formations, when not exposed to loss, has never been denied.

will permit, with the movements of the corps to which they are attached.

Any special directions renewed by the officer commanding Artillery from the General or other officer in command of troops, relative to any change in the disposition of the Batteries during the movements, will of course be promptly carried out.

No Battery ought to be exposed to the risks of infantry fire, unless under unavoidable circumstances which occasionally occur in action.

By command,

"C. R. EGERTON, Major-General,

"*Deputy Adjutant-General.*

"*Aldershot*, September 17."

Where this is not the case extension is resorted to, but even then further precautions are necessary, in order to avoid the loss which would otherwise suffice for repulse. One author tells us that ground is gained to the front by "fits and starts;" another states that one portion of the skirmishing line only advances at a run, and having attracted the fire of the Defence, sinks, another section of the line taking up the running. Wherever cover is found, troops are rallied again in small bodies until the point is gained from which their own well-aimed fire, at 400 or 500 yards, may be brought to bear against the defensive position.

It is only after sufficient impression has been made by this and by artillery fire, and when indications present themselves that this has become intolerable to the defenders, that the heavier bodies move out into the open, in order to take possession of the ground which has thus been won.

The moral is, that where assault is henceforth undertaken before the power of the Defence has been sufficiently weakened by superior fire, it must inevitably be met by repulse; and that the art of warfare now is, to develope that superiority by organization, tactical formations, and leadership, to the utmost possible limits.

CHAPTER VI.

"Wollen wir fortfahren, uns auf unserer Höhe zu halten, so seien wir konsequent, werfen wir die Formen hinweg die nicht mehr im Ernstgefecht taugen, und acceptiren wir vor Allem *als Grundsatz, jedes Gefechtsexerziren, jedes Feldmanöver dem Ernstgefecht möglichst entsprechend zu führen.*" ('Taktische Folgerungen aus den Jahren 1870–71.')

On Wednesday, the 20th of September, the troops rested, and on that day the following orders were issued from head-quarters:—

"ARMY CORPS ORDERS.

"Aldershott, *September* 20.

"The 2d Division will, for the operations of to-morrow, be broken up and divided between the other Divisions. . .

"These arrangements will be carried out on Thursday morn-

ing, the troops moving at such hours as the General Officers commanding the Divisions which they are to join may direct.

"By command,

"C. R. EGERTON, Major-General,

"*Deputy Adjutant-General.*"

These were accompanied by a continuation of the general sketch:—

"HEAD-QUARTERS ARMY CORPS.

"ALDERSHOTT, *September* 20.

"*Thursday, 21st.*—The defending force (1st Division) having yesterday maintained its position, has been reinforced, and will this day advance.

"The enemy (3rd Division) will endeavour to check the advance, and cover Aldershott.

"There will be no limit to the area of operations, except those laid down by the Military Manœuvres Act, and such lands as have been interdicted by the Commissioners.

"Each corps will move at such hours as will bring it into the position selected by the General Officer commanding, from which to commence his operations, by 9 a.m.

"The baggage of both forces is to be considered as neutral to-morrow.

"By command,

"C. R. EGERTON, Major-General,

"*Deputy Adjutant-General.*"

Major-General Carey, whose Division was thus broken up, assumed the command of the defending

forces in the place of Sir Hope Grant, who retired to the office of Umpire. Sir Charles Staveley, on the other hand, continued the direction of the invading army, now compact and united.

The question will probably be asked, why this desirable equalization of force was delayed until the last day of the Manœuvres? The only answer is, that the earlier *Ordre de Bataille* was adopted solely with a view to accommodate the arrangements and capacity of the Control Department.* From the moment when, owing to the return of the troops to the Permanent Camp, further extraordinary exertion on the part of the Subsisting Staff is dispensed with, freedom is restored to the Operating Staff. The evil would not seem so grave were matters relating to division of force alone concerned. Unfortunately, there is the strongest reason for believing that the consideration demanded from the Operating Staff conduced mainly to the framing of dispositions which have been freely criticized in earlier chapters. But there can be little doubt that many who have joined in the cry, in the press and elsewhere, against the Control Department, are

* This is merely an inference drawn from facts which otherwise seem difficult of explanation.

themselves unacquainted with the principles upon which the regulated supply of large operating bodies rests. An army manœuvring in England, in time of peace, is absolutely dependent upon its magazines. Cantonments are not available, nor is there any power of requisition. There are markets, and there are railways in abundance. But if troops were dependent upon railways alone for supply, their movements would be necessarily tied to the lines in question, and a similar evil would be reproduced in another form. Assuming the magazines in the present instance to have been placed in the Permanent Camp, it is clear that the farther the operating bodies were moved from Aldershot, the greater would be the demand upon the transport required to supply their wants. Indeed, the moment would soon arrive when the most liberal allowance of transport would no longer suffice for the purpose, and the magazines must themselves be advanced from the original base. The difficulty, of course, is still greater where forces hostile to each other are supplied from one and the same source; and the ingenuity required to meet this necessary demand must surely react upon the military operations. The question, therefore, resolves itself, first,

into the establishment of temporary magazines at well-selected points; and, secondly, into the preparation of sufficient means of transport, in the shape of horses and waggons, to carry the supplies from these magazines, with the troops, to their future halting-places, wherever that may be. That operations in the field are always dependent, in degree, upon considerations relating to supply, is evidently true. The perfection of military administration is attained when this restriction is reduced to a minimum. That the problem is more difficult in this country in time of peace than during war, may be readily conceded. That it was not solved, in this instance, to the great detriment of the military exercises, is equally certain. The failure seems due rather to want of experience, or adequate means, than to any other causes. But the moment is opportune for drawing an inference of vital importance. The organization of the Subsisting Staff should be regulated, first, with regard to the capacity which may be demanded from it; and, secondly, on the footing of entire subordination to the Operating Staff. No greater evil could possibly be produced than to admit the claim of the Control Department to independent action or rival position.

Before proceeding to examine the operations of the day, it will be well to allude to an impression which seems to have prevailed, that the object of Carey would have been attained by entering Aldershot without collision. A moment's reflection suffices to show that this could not be the case. The term used in the Sketch, "to cover Aldershott," was probably intended to give definite direction to the operations of the day. Carey's force was now, for the first time, emerging from its defensive attitude; but, though the *rôle* was thus changed, the purpose of covering the approaches to the Metropolis must necessarily remain a primary consideration. To steal into Aldershot by a wide, sweeping movement round either of his enemy's flanks, could scarcely be considered conducive to Carey's interests, or a fitting solution of the military problem. It might represent a skilful march; but, unless that march improved his fighting position with reference to his adversary, it must surely redound to his own disadvantage. Without combat there can be no victory, and to attack with tired troops, from a position facing the capital which it was the object to defend, would be to court defeat, and ruin in case of defeat. Sir Charles

might, therefore, feel certain that he would be attacked upon the ground eventually selected, the only uncertain feature being the form of attack with which he would have to contend. There have been instances, no doubt, where armies clinging to defensive positions have been intercepted and destroyed. But the proposition implies an amount of superiority scarcely inferior to that which was wielded at Ulm and Sedan. Under ordinary circumstances it is simply impracticable.

On the present occasion the idea received a certain amount of force from the recollection of a *ruse* successfully imposed upon the Intelligence Department of the Defender in a similar operation on a smaller scale. In order to gain an enemy's flank, for the purpose of advantageous attack, demonstrations of the kind alluded to are palpably valuable in the highest degree. But, to confuse the means with the end, to expect to cut the knot without the sword, is an absurdity which cannot be too clearly exposed.

The ground which was to form the scene of action has already been sufficiently described. The railway and the canal, again, divide it into a northern and southern sphere. The tactical im-

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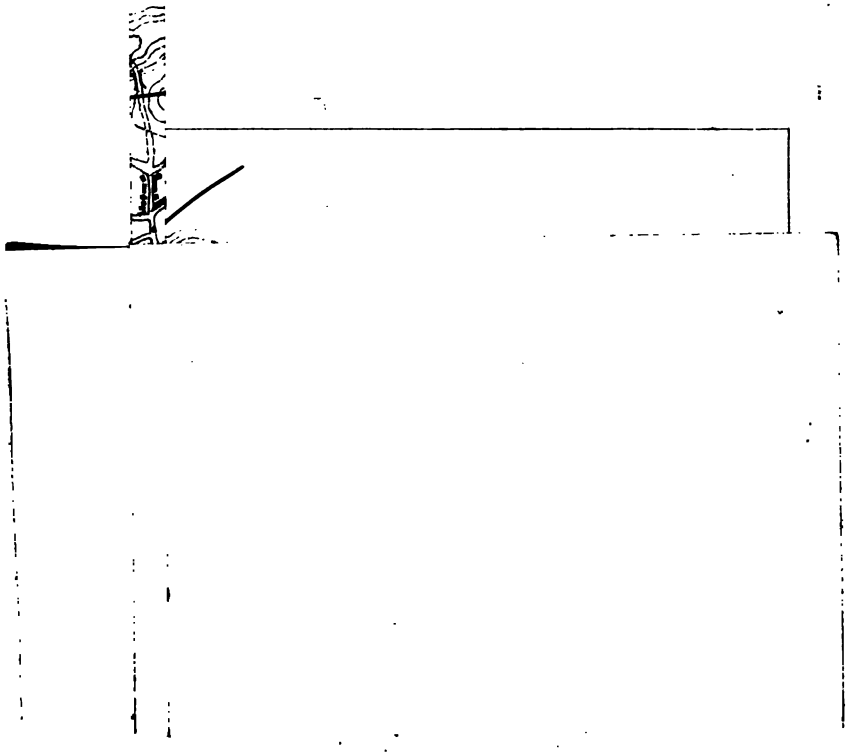

portance of these lines is such that the attention of the Defender must certainly have been drawn towards them. But if Sir Charles had selected to place his entire force in position here, he must have abandoned the Chobham Ridges to his adversary, who would then have turned the commanding ground to account. It was easy, therefore, to foresee, that the first step taken by Staveley must be to fall back upon the Ridges immediately in rear of his camp. Practically, from the character of the ground, he would here be safe from direct attack. His adversary must, therefore, resort to one of two alternatives. He might, under cover of demonstrations at other points, move off for the Bagshot woods, in order to turn Staveley's left; or, shrouded by his cavalry, execute a flank march in the opposite direction, through the wooded lanes, towards Woking and Pirbright. Under circumstances of actual warfare, there can be little doubt that the first course would have been selected. It is impossible to exaggerate the value of woodlands for offensive purposes, where the troops engaged are sufficiently practised in that kind of warfare. In fact, the weak point of Staveley's position on the Ridges was the extent of wooded ground on his

left. But the road towards the declared objective would be greatly prolonged by the necessary circuit, and wood-fighting, unavoidably slow, was barely calculated for the early decision which was requisite in the present case. Thus, even if Sir Charles had not possessed the accurate information with which he is justly credited by the *Times'* correspondent, his attention must have been drawn, principally, to his right flank. The question which presented itself was, how best to utilize the canal and railway for impeding the enemy's march in this direction? The passages as far as Brookwood, eastwards, were within Sir Charles' reach and power; further, towards the Boundary, which extends to Woking, they were nearer to his adversary. The destruction of the former, therefore, would force Carey to a somewhat wider movement, which, considering the character of his march, was perhaps preferable on other considerations. The step was clearly insufficient for the purpose, and it was of importance to realize whether other dispositions of a more promising character might not be resorted to. The problem well illustrates the extreme difficulty which prevails in the choice and occupation of purely defensive positions. We are constantly warned,

that concentration of force is the one principle to be borne in view in military operations, especially on the part of the defence. But, if rigidly acted up to, it precludes, in many instances, the opportunity of local defence, however favourable the ground may be for the purpose. In the present case, if Staveley kept his force in hand on the Ridges, he might deny a certain portion of the ground on his right front to his adversary, by destroying the passages within his command, but he must inevitably conform to his enemy's initiative so soon as the latter had cleared these obstacles at the wider points. In a word, Carey's march by his left, along the boundary, would force Staveley to vacate the northern sphere of his defensive ground without a blow. It is quite true, that it is of advantage to the Defence to narrow ground which is too extensive for safe occupation. But the remaining position on Fox Hill had one glaring defect. The slopes on its left front were covered with high, hollow wood, practicable, more or less, for all arms. Considered with reference to the railway and canal, these woods might have been utilized with advantage by the Defence. But the primary position on the heights, in rear of the woods, repre-

sents a defensive attitude which has often been punished in the history of war. The opportunity is offered to an enemy who knows his work, first, of concentrating at leisure; secondly, of reconnoitring and demonstrating; and, lastly, of making his true attack.

Throughout these operations, the value attached to the occupation of high ground, in a purely passive attitude, seems excessive. The idea of vacating such ground, for purposes of offence, however favourable the opportunity, seems never to have been entertained, yet herein lies the essence of successful defence. Where the direct attack of a defensive position is not feasible,—a case which will often occur in future warfare,—the assailant must inevitably move off to one or both flanks, according to the superiority he possesses. In the former, as the more ordinary case, it should be essential to the success of his undertaking that the conception and execution of his project be carefully concealed, until his point is gained. The passage of a tactical barrier, such as was presented by the canal and railway in this case, is a very serious consideration. Once committed to the movement, it is difficult to withdraw, and if the

enemy, having penetrated the design, should have succeeded in occupying the defiles, the assailant will find himself compelled to a series of wasting assaults. Such was the case at Austerlitz, where the line of the Goldbach, so stoutly contested by Davoust, proved fatal to the Russian manœuvre. It is precisely on such occasions that the value of counterstroke is most apparent, and if, as in the instance taken, the original assailant finds no line of retreat on his outer flank, disaster is inevitable. If Carey undertook to march by his left, that flank would be dangerously close to the boundary, whilst his right was exposed to his adversary's attack, and his front impeded by obstacles, which, if occupied, were almost insurmountable.

It is urged, therefore, that even without the information which Staveley possessed, at a very early hour, with regard to his enemy's plans, efforts should have been made to turn any such opportunity, if offered, to account. This might certainly have been effected without detriment to the general dispositions,—should the enemy pursue the other alternative,—by the occupation of Pirbright with one Brigade of infantry and as much cavalry as could prudently be dispensed with. But then

the passages through the railway embankment, and across the canal, towards the Ridges, should have been left open for the speedy re-concentration of the detached Brigade if Carey moved to the opposite flank. On the other hand, the effort should have been made to close the further defiles, towards the boundary; or if this were not feasible, the attempt of the enemy to cross should have been at once opposed. Fighting would then have commenced at an early hour beyond Brookwood, and it was for Staveley to judge, according to the enemy's action, whether he would attack him in flank north of the canal, or whether, drawing close to his detachment, he should fall back, covering the roads to Aldershot.

The actual movements were as follows. In the early morning, Staveley, having struck his camp, and sent off his baggage, fell back upon Chobham Ridges, where he was joined by Smith's Brigade from Wishmoor Bottom. A detachment of cavalry was ordered to Pirbright with a party of sappers, to blow up the railway arch, and to destroy the bridge on the canal at Brookwood. Acting solely upon information which reached him relating to his enemy's movement, Sir Charles

soon vacated the ground he had first occupied, and, marching by his right, withdrew to Fox Hill, where his force, with the exception of a demi-brigade left on Curley Hill, was massed by half-past ten o'clock. The purpose of this premature march is difficult to perceive. Probably it was executed in such hurry in order to anticipate the assailant, and to gain the time which was considered necessary for framing adequate dispositions for his reception. No measures seem to have been taken for accompanying and watching his march, but a body of cavalry was left in observation concealed on the broken face of the Ridges. It may be well to state here, that the demi-brigade, left on Curley Hill, was shortly called in, but, owing to some error, returned to Aldershot, instead of joining Sir Charles on Fox Hill.

Carey, meanwhile, had assembled his three brigades, including Maxwell's, on Westley Green. The information which had reached his enemy was perfectly correct. His purpose was to turn his adversary's right, should he remain on the Ridges, crossing the formidable barriers which interposed on his march, at points where he could best reckon upon unopposed passage. Using his cavalry to cover his

right flank, he moved off at nine o'clock, pushing on the Prince of Wales to occupy such passages as might be found open between Brookwood and the Boundary. His columns were directed along the roads leading through and round Chobham, his right Brigade marching for Brookwood. Finding no opposition, and observing that his adversary had early conformed to his movement, he drove in Staveley's vedettes from Pirbright, ordering the Prince, who led his advance, to occupy the woods about Henley, and to reconnoitre, as far as was feasible, the enemy's intentions. It was in the performance of this duty that the Prince penetrated somewhat too far for his own safety towards the interior of the defensive position. Undertaken by a squadron leader, instead of a General of Division, the raid would have been justified by the fact that Staveley's dispositions were thus fully exposed and reported on. It was found that that General having crossed the Guildford and Farnborough road, which divides the open plateau on the crest of the hill, had carried his Division towards the southern extremity of the heights where the ground on his front was open, and the road leading past Henley to Ash and Aldershot was entirely exposed to the

fire of his batteries, placed on the projecting spurs. The wooded slopes on his left front were indifferently watched by patrols, but the northern half of the plateau seemed entirely denuded of troops, and no attempt was made on the part of the Defender to drive off the troopers who settled quietly under cover at the base of the heights. Evidently, Sir Charles, far from contemplating offensive action, and well satisfied with the command offered by the ground he had selected, expected to arrest the march of his enemy, forcing him to turn against the front of his position. That the attempt would be made to enter the plateau from the north seems never to have entered his mind. Yet the woods at his feet were open to such an extent that cavalry and infantry could manœuvre freely within them, and artillery without much difficulty,—a fact which the most cursory examination would have exposed.

Carey therefore, though delayed upon the canal, soon made good his passage, marching steadily forwards to concentrate within the cover secured by his cavalry. Halting for a while to rest his troops and complete his dispositions, he then proceeded to demonstrate with Maxwell's Brigade towards Staveley's front. The real attack, represented by

Lysons, with Prince Edward in support and covering his left, was pushed through the steep gorge under Hangman's Hill towards the unoccupied portion of the plateau. It was executed, in the first instance, exclusively by infantry, the 42nd Highlanders providing the advance. The formation of this regiment in three successive lines of skirmishers, its brisk movement over the steep ground, and the silent but vigilant discipline evinced in the ranks, seemed all that was necessary to clench the success of the operation. The summit was gained almost without opposition, and up to this time it would be difficult to find ground for adverse criticism. But Lysons proceeded, on reaching the crest, which was open from end to end, to deploy his battalions in three lines at short intervals, one in rear of the other.* Before the deployment of the Highlanders was completed, their skirmishers were cleverly brushed away by the charge of a squadron of dragoons, to which the safety of this flank had been entrusted. But more could not be expected from its action, and Lysons, retaining his Brigade in the same formation, crossed the Farnborough road, moving south. The surprise was complete. The

* *Vide* Plan V., enlarged sketch.

appearance of Wolfe's soldiers on the heights of Abraham was not more startling to Montcalm than was that of Lysons to Staveley. His dispositions, however, were soon made. Ordering off the cavalry and horse artillery to confront the danger on his left, he set his infantry in motion to support their action. Thanks to the formation he had adopted, and the absence of other supporting arms, which were moved on less difficult ground on the right, Lysons' position soon became extremely critical. Staveley's guns, rapidly brought into play, opened fire with telling effect upon the well-dressed lines which faced them in the distance. His cavalry meanwhile, descending into a ravine which seemed made for the purpose, trotted forwards to a point which brought it to the very edge of Lysons' exposed right flank. A sharp wheel to the right, a cheer, and a dash was all that was required to roll up Lysons' lines from end to end. But the officer in command, from whatever cause, refused the opportunity, and turning in the opposite direction, re-formed on the high ground in the distance, fully exposed to view, having placed the ravine between himself and his enemy. Five minutes later he received the order to charge, but one-fifth of the

time would have sufficed to render his action unavailing. The charge was repulsed, and as the troopers retired the supporting arms, of which Lysons stood so sorely in need, made their appearance, forming on his right flank.

To follow the action further would be profitless; it soon merged into the chaotic proportions, so vividly described in the columns of the Press at the time. The result of the engagement was given by the Umpires in Carey's favour; a decision due rather to the skill he had evinced in turning his adversary's early shortcomings to account, than to his own tactical dispositions for action. It is difficult to believe that Lysons could have held his ground in face of the crushing fire to which he was so long exposed without power of reply. All evidence tends to prove that under similar circumstances the power of artillery is simply irresistible. Considering that Maxwell's Brigade was similarly exposed on the opposite flank, the probability is that Staveley would have found time to recover from his surprise and repulse the attack. There can, however, be little doubt that the operation ought to have proved successful, and it is fortunate that an opportunity was thus provided of considering to what causes the opposite result may be attributed.

It has been stated that the column of attack in the first instance was composed exclusively of infantry. In forming it the General in command was influenced no doubt principally by considerations affecting the ground, then by the character of the opposition he might find on first collision. It was to be anticipated that, having gained his adversary's flank, his advance would first be disputed by cavalry, secondly, and almost simultaneously, by artillery, from the ordinary position accorded to, and power of rapid movement inherent in, those arms. The question therefore must have arisen, whether, in the probable contingency that the supporting arms were not up in time, his infantry could meet successfully the combined arms with which he would inevitably be brought into contact. Where surprise is enlisted as the principal element of success, there is clearly no room for delay. To await the arrival, by a circuitous route, of detached arms is to offer to the enemy the time required to recover from a first stupor. To be fruitful, skilful strategy must be immediately clenched by unhesitating action. It was for Carey therefore to consider whether infantry alone would suffice to follow up the advantage which his early dispositions had enlisted in his

favour. The answer may be supplied before waiting to consider whether the *terrain* was such as to preclude the presence of the other arms with Lysons' column. There can be no doubt that where cover can be found, whether from the presence of wood or in the broken surface of the ground, both cavalry and artillery may be driven off by infantry, provided the formations are sufficiently flexible and the system of fighting sufficiently matured. The devotion shown by the former arms at Königgrätz, seldom excelled, was quite inadequate to stay the march of the Prussian foot-soldiers. The guns were carried or the equipages destroyed, and the cavalry in most instances decimated or dispersed.

This result was due exclusively to the power of fire which the Prussians have succeeded in extracting from their infantry. In 1866 victory was thus secured almost without an effort, but in 1870 they were met by battalions better armed than their own. The information which we possess tends to show that in spite of this the same superiority was asserted, though of course in a less marked degree. It is therefore clearly insufficient to rely solely upon the capacity of rapid firing or wider

range inherent in this or that special arm. The origin of Prussian success must be sought, first in matters relating to organization, and secondly, in the fact that, recognising the value of the arm, they have adapted their tactical formations to bring it into play. Fire is the principle they worship, its development and efficacy their study, all else being secondary and subservient to this end. Considering that a similar principle underlies the system of tactics inherited from our fathers, it is somewhat surprising that so much difficulty should be found in realizing present truth. On what have the advocates of the deployed line relied in opposing its action to denser columns of attack? On the power, the destructiveness, the efficacy of its fire. The question no longer relates to collision with dense, but with shadowy substances. If the line was preferable in action to column, as being superior in its fire and less exposed to loss, it is precisely for the same reasons that this formation must vanish into space when met by others asserting the same principles in a higher degree. But we are met by this difficulty. In order to secure the cohesion of the line, in order to render it available for meeting, or

executing, the charge, in which decision was formerly sought, a system of drill exceeding that of all other armies in rigidity and stiffness, was thoughtfully introduced, its future being secured by the safeguards with which every English officer is familiar. Nothing can be more opposed to the infantry tactics which have so lately earned victory than the leading and movements of the well-drilled battalions which took part in the manœuvres. But the officers and non-commissioned officers of the British army have been trained to believe that herein lies the *summum bonum* of military excellence. Sound reasons may prevail for preserving a system of tactics which has always hitherto told against an Oriental foe; but ten minutes spent in actual collision would suffice to expose its utter inadequacy for European warfare.

Perhaps the present illustration may serve to bring out the value of the one system as opposed to the other. Lysons, on reaching the crest of the hill, proceeded to deploy. Considered from a point of view altogether out of date, his dispositions in so doing are open to criticism. The right flank of each of the deployed battalions was entirely uncovered, exposed therefore to the attack of

that arm the early action of which he had most cause to fear. Moreover, the action of his soldiers was paralysed by the formations adopted. As skirmishers were in front, not a soldier of his three deployed lines could have used his rifle, and if these were called in, one line only could have delivered its fire.

It may be said, therefore, that Lysons' difficulties commenced when the crest was reached,—a matter of little surprise, inasmuch as it has been argued repeatedly, that the British army has not been tactically trained for the fighting of the present day. Let us assume that the column of attack had belonged to the Prussian, not the British army, and endeavour to trace its probable course. In the first place it would not have been unsupported, for where mounted infantry officers can ride, cavalry should be able to move. Possibly, too, the artillerymen, who succeeded in bringing up guns on ground which had been pronounced impracticable for cavalry at Spichern, would not have been deterred by the spurs of Fox Hill. Taking matters as they were,—allowing for the difference between peace and war,—their first effort would have been directed to the permanent occupation of the

skirts of the wood along the plateau, and to the massing of the supporting battalions on fitting spots within it. The ground on the crest would then have been rapidly examined. Nothing is more certain than that this step must precede the movements of troops, of whatever arm, in future offensive action. If it is impossible for troops to remain exposed, cover must be found, and officers trained to find it, where its presence is at first sight least apparent. The Advance, meanwhile, would have continued to gain ground to the left along the skirts of the wood, driving off the cavalry that interfered with its action, and constantly reinforced as progress was made. Under this protection, a dense line of skirmishers would have been thrown across the plateau, covered by which columns of companies would have doubled rapidly across the crest in order to settle in the broken ground on the opposite flank of the hill, extending along the brow. The entire plateau would thus have been swept for a distance of 800 yards, at least, by a fire which would have denied the possibility of approach, with a limited amount of exposure. Compare the fire delivered, and the loss sustained with similar re-

sults accruing from the formations actually adopted. Who can assert that the action of cavalry and artillery, properly combined, would not have sufficed to drive Lysons from his ground before support arrived? What would have been the influence of these arms if Lysons' breech-loaders had been brought into full, effective play? From a notice recently reported in the 'Times,' that garrison instructors had been ordered to lecture upon Tactics, the importance of the subject has not escaped the attention of the authorities. But how are these lectures to be delivered—in accordance with well-digested tactical instructions issued from the Horse Guards, simple and uniform, or dependent upon the intelligence, promptings, and knowledge of the individual? The British army stands sorely in need of tactical instruction, but this should be preceded by a radical change in the organization of its regiments, of its battalions, of its companies, of its system of drill, and *fighting discipline*. Is the British army of the future to consist of regiments of one, two, or three battalions? Are the battalions to contain four, eight, or ten companies? Should the companies be formed in two, three, or four ranks? Are

the offices of adjutant and serjeant-major to continue in the full vigour of the past, or is the colonel to command his battalion, the captain his company? When these questions are decided by the light of the events which have so recently engrossed our attention, we may look hopefully and trustfully to the future, but not before.

Of all the days of manœuvre, the last was the most satisfactory, most calculated to afford matter for reflection and instruction. It is but just to recognise that the first opportunity was seized by the authorities to secure to the commanding officers that liberty of action, without which, time, trouble and money will be equally thrown away. It resulted, that opportunity was afforded for the conception and execution of independent plans of attack and defence. That these were either incomplete or faulty, might be expected, but the lessons are not less valuable to those immediately concerned, or less instructive to such as may care to study the interesting profession to which they belong.

The manœuvres closed with a Review, which attracted general admiration. The army stood here on its own ground, and he would be a bold man who ventured to criticize the dispositions by

which it was placed in array, or its appearance and equipment, as it marched past the Commander-in-chief. The material is present in ample degree; all that is wanted is the animating spirit.

TAYLOR AND CO., PRINTERS,
LITTLE QUEEN STREET, LINCOLN'S INN FIELDS.

THE AUTUMN MANŒUVRES AND ARMY ORGANIZATION.

AMID the mass of criticism which followed the Autumn Manœuvres, it was only natural that a good many foolish things should be said, but perhaps the silliest of all has been the apocryphal judgment upon the appearance of our troops supposed to have been passed by the foreign officers present on the occasion. That any of these gentlemen who were asked for their opinion should have given a polite rejoinder to their hosts is likely enough, but the form in which their opinions have been reported is simply ridiculous. What probably happened was, that a perfectly irresponsible newspaper correspondent fell into conversation with one or more of the foreign officers present, whereupon it is reported that the whole of these gentlemen have collectively pronounced our artillery to be incomparable, our cavalry superb, and our infantry very good; and on this the statement is taken up by the leading newspaper as representing an unquestionable fact, and is henceforth dragged in whenever the British army is discussed, and no doubt accepted as an article of faith all over the country wherever that paper is read. From the sort of way in which the phrase has come to be bandied about, it might be supposed that the foreign officers in question had held a meeting to consider the matter, General Blumenthal in the chair, and had passed a resolution to the effect, "That, in the opinion of this meeting, the British artillery is unrivalled, the British cavalry superb, and the British infantry very good." The idea that the officers of any continental nation should consider our artillery to be more than a rival for their own is sufficiently absurd in itself. Whatever a foreigner may think of the British army, we may be sure that his own at any rate stands first in his estimation; but the proverbial vanity of the French, and their tendency to take the merits of their army on trust, have at least been matched by the complacency with which this imaginary dictum of the foreign critics has been accepted through the length of the land at the bidding of the *Times*. The absurdity of the thing appears the greater if we consider that the vast majority of the people who have thus been satisfied to ticket off the attributes of our army in this fashion, have absolutely no better foundation for their belief than the remark of an anonymous newspaper correspondent.

Of a piece with this sort of criticism have been some of the lucubrations of the men who, describing their experiences of the manœuvres, protest against the want of reality displayed in them, because the troops exposed themselves to a degree that would have been very dangerous in actual war. That some instances of this sort occurred deserving to be characterized as blunders may be admitted. The cavalry frequently appeared in positions where they either effectually masked the fire of the infantry and guns of their own side, or would have been destroyed by the enemy's artillery; the infantry, too, manœuvred on occasions in a manner which would have been impracticable in actual warfare; and the guns were frequently employed at ranges within infantry fire, where the gunners would certainly not have been able to work them. Mistakes of this kind occurred, and autumn campaigns will be very useful if they serve to teach those who have the handling of troops to apprehend at once, when in the field, the common-sense principles which underlie military movements. But when it is gravely objected in the columns of a leading newspaper, that a general officer was seen standing on the top of an exposed railway enbankment watching the enemy, whereas in fact he ought pro-

perly to have crept stealthily up the reverse side, and shown only the top of his nose over the summit, it seems sufficient to reply that there is already want enough of reality about these sham fights, and that if the education of the British officer is not to be completed until he has learned to play the fool in this way, it may be hoped the object will not soon be realized. Further, we would raise a protest against the assumpsion implied in much of what passes for criticism now-a-days, that the main object in fighting is to make use of cover. No doubt needless exposure of troops is to be deprecated; but, from the sort of stuff that has been written on this head, it might be supposed that battles are to be won by creeping from bank to bank like the North American Indians of Fenimore Cooper's novels. Modern arms carry far, but modern battles are not marked by heavier losses than those fought with muskets and smooth-bore cannon; and the last great war showed that bold attacks over open ground were not a bit less effective than they have ever been before, and, what is very much to the point, that in such cases the assailants have often suffered smaller loss than the antagonists they overthrew. Tactics are, no doubt, very proper things to study, and the scientific education of the army cannot be carried too far, but to the common soldier the interest of the day is centred in his immediate front, and the good old quality of courage is just as useful as ever it was. There seems some danger lest this truth should be forgotten; at any rate we hold it to be quite needless to indoctrinate men with the notion that the first object when under fire is to seek for cover; *that* lesson will be learnt quite soon enough without any teaching.

This, however, is a digression from the matter in hand, although we must add, as was well remarked the other day in our hearing, that, after all, these manœuvres left out the best side of the British soldier. Unless our foreign critics could see how he fights, they have not seen the best side of him, which *view was fortunately* here wanting. A shrewd observer, who was present at the great review at Paris of the British army after Waterloo, and who had himself borne a gallant part in that battle says, in his diary, that the British troops, which were then at the summit of their reputation, were conspicuous for being the most undersized, ill-dressed, and generally mean-looking lot among all the armies assembled there; and the record may be grateful to those who fancy they see evidence of physical degeneracy in our present linesmen and militia.

We have here however to do with the results which can be exhibited by a Camp of Manœuvres, and of these there has been an abundance afforded for imparting useful experience. Not indeed that such proof was necessary in every case. There did not need a camp of exercise to tell any one who was acquainted with the subject that the Control Department would prove unequal to its duties: this was clearly foreseen by every one who understood the nature of its organization, although the general public may have needed the evidence of an actual breakdown, just as experiments serve to impress physical truths on the company at a popular lecture. For that the Control Department did break down we take to be quite established. Whether the troops were kept without food and fuel for the exact periods reported in the papers, appears immaterial; that the distribution of rations and forage was irregular and often tardy is an undoubted fact; and under the conditions of the case, where the troops were moving over a contracted area of ground, always within easy reach of Aldershot, and with abundant and generally good roads, any such irregularity is tantamount to failure, more particularly when the magnitude of the staff employed and the time allowed for preparation are considered. The Department will perhaps throw the blame on the hired carriage, which was certainly very defective, and as certainly was no creation of the executive officers, who no doubt would have much preferred their own waggons and horses; but the best use was not

made of the means at their disposal. There was throughout a want of understanding between the Department and the troops, and discipline was very imperfectly maintained among the hired transport. The straggling allowed was excessive, and in consequence the whole day was often needlessly consumed in making a perfectly insignificant march. Had the army corps been marching on in one line, instead of moving to and fro over a contracted space, its advance would have been retarded in a most pernicious way by the necessity of waiting for supplies. One small reform, therefore, that may be expected to follow the revelations of the campaign will be the establishment of a small reserve stock of waggons, sufficient, it may be presumed, for at least one army corps, although there is no need to keep up a supply of horses in peace time. A still more important reform is shadowed forth in the discovery now beginning to dawn on the mind of the British public, that the title "Control Department" is altogether inappropriate to the functions performed by the body now styled by that name. With the perception of this truth it is to be hoped we may arrive at sounder views of the proper organization of the Department, and consequently of the whole system of supply for the army. The business of the army naturally divides into two main branches—first, the supply of food, clothing, and arms; and secondly, the government of the troops: but why the duties involved in the one should be regarded as more in the nature of "control" than those of the other we fail to perceive, as must any one else who takes the trouble to think over the matter. The real "controller" of the army is he who controls it both in men and things; and if there is no one individual who unites both these functions, then there is no proper controller. But if the title is to be given to some one, it is more properly bestowed on the General commanding than on any civil subordinate in his division; it would be thought absurd to give the title, for example, to the quartermaster or paymaster of a regiment, leaving the colonel out of sight. The fact is, the employment of this misleading title arose out of a hazy misconception that this Department was to be entrusted with some important financial functions which would conduce to economy in army expenditure; but a very slight acquaintance with the matter should make it evident that this idea was based on complete delusion. The civil branch of the army may be divided in a general way into two main branches, the first of these comprising the manufacturing departments, which fabricate the military stores of all kinds. Now, in the management of these great establishments there is room for an indefinite amount of financial manipulation, because it is here that the civil expenditure in the main takes place, and that economical management can produce sensible results; but with this great branch of expenditure the officers of the Control Department (if we except one or two of the head officials seated in the War Office) have nothing whatever to do. The Control Department is engaged for the most part in the mechanical business of issuing stores made elsewhere, and of paying the troops. Even in such matters as contracts for food and forage, the local officers have in reality no controlling authority; they are the mere agents of the army of officials sitting in Pall Mall, and their business is mainly to refer matters for the orders of the latter, and to act without question upon their instructions. As to the pay branch of the Control Department, it needs hardly be said that it is bound hard and fast by detailed rules, that its duties are purely mechanical, and that no cases ever arise in the discharge of those duties to call for the exercise of individual judgment.

While, however, the effect of creating this Department has not been in any sense to decentralize authority or to invest local officials with responsibility, the inappropriate title given to it has tended to create a false impression that its members possess an authority which really does not belong to them.

People are naturally misled by names, and those who do not go below the surface of things find it difficult to understand that an official with this high-sounding title has really no controlling authority whatever, but is a mere post-office for conveying references to the War Office, or at most is powerful only for obstruction. This fact has, however, now been forced on the attention of the public, and it is to be hoped that, the imposture once detected, there is still a sufficiency of volition remaining in our administrative system to admit of the needful change being carried out. If there follow only this one result from the manœuvres, that the Control Department comes to be recognized as what it really is, a cumbrous and over-centralized store and pay agency, and its title adjusted to coincide with its functions, the Autumn Camp will not have been established in vain.

As regards the course of the manœuvres also, a good deal of the criticism so freely offered appears to us to have been wide of the mark, the small errors of subordinates having been dwelt upon for the most part, instead of the large ones of superiors. This is like blaming the crew instead of the pilot for running on the rock. No doubt all that has been said about these blunders is quite true. Infantry advanced over open ground swept by artillery, when they might have moved up under cover on the right or left; cavalry rode about in all sorts of positions where they ought not to have been, masking the fire of their own side, or exposing themselves to utter annihilation; artillery plied their guns at ranges where not a gunner could have lived,—all this and more happened; but to recount these things is merely to say that the troops were not properly handled, and about this there can be little doubt. In the first place, when the second and third divisions were operating against the first, they had no head, and the two divisions worked in consequence without any unity, and might have been crushed any number *of times over in* detail, if the defending force, instead of passively retreating, had turned vigorously upon either; while the defending force often made no real defence at all, strong positions being repeatedly given up before they were seriously pressed, without attempting at any rate to offer that best of defences, an offensive one. In this respect the operations truly deserved the name of a sham fight. In the affair of the last great day, the perfect helplessness exhibited on one side was sufficiently evident without commentary. And there is nothing to prevent the same sort of thing recurring on future occasions. However carefully the programme may be drawn up, and whatever may be the degree of excellence eventually arrived at in feeding troops in the neighbourhood of London, such manœuvres can never be successful unless ably directed, and it is not necessary to have manœuvres at all in order to make the discovery that everybody does not possess the gift of handling troops well; for it is a natural quality, just as much as the power of speaking well. Some men, by dint of perseverance and practice, overcome the difficulty, and manage to become tolerable speakers although not possessing any natural aptitude for the art; but, as a rule, good speakers are good from the first, while those who are bad at the beginning continue to be incurable stammerers in public until the end of the chapter. It is just the same with tactical power, that is, the power of handling troops effectively in the field; it is an art for which many officers show a perfect inaptitude; and, moreover, there is not in this case anything like the same opportunity for overcoming natural defect by practice which occurs with regard to public speaking. We must remember that our generals, equally with all the junior ranks of the service, are almost wholly without experience in this branch of their business. The sort of conventional parade work which has hitherto done duty for tactical practice at every spot in the empire where British troops are stationed—when two or three battalions, with an occasional battery, are put

through a set of stock manœuvres on a piece of ground where every hillock has been shaved off, and every hole filled up—bears hardly the faintest resemblance to the problem which has to be performed in actual war, of bringing a body of troops through a variety of obstacles and under varying conditions of distance and ground up to a certain spot by a certain time. Nor is this branch of the art often to be learnt by actual practice in war, because the opportunities for practice on a campaign may occur but seldom. The public would be quite misled if they supposed that because a man has seen a great deal of service, as the phrase goes, he has therefore had much practice in the actual handling of troops in the presence of the enemy. Whole campaigns may pass away with scarcely an opportunity for such an operation; it occurred only once or twice, for example, in the whole Crimean war; and a man may have reached in appearance to the top of his profession, and have every possible decoration after his name, and yet be a perfect child in respect of tactical knowledge and skill.

Two important points, then, are to be borne in mind: the art is a difficult one, and not to be mastered by everyone; and the opportunities for acquiring it are only to be gained in peace. A person might as well expect to become a proficient in violin-playing by performing only in public at concerts, as to become an expert tactician by the amount of practice that will usually be offered on the battle-field. Yet the art is not the less important because so rarely acquired. The critical moment arrives once only perhaps in a man's lifetime, but yet come it may, when the fate of a campaign depends on the relative skill with which the opposing Generals shall bring their forces into action; but then will be reaped the reward of patient study or of natural genius, and then too we may be sure that men who have always blundered will blunder again. Looking therefore at the insufficiency of practical training usually afforded, either by war or peace under ordinary conditions, we may appreciate the value for tactical purposes of a camp of exercise, and the importance of turning it to the best account. How far this was done on the late occasion, those present can judge. Certainly, a sure way towards nullifying its value is to appoint to leading posts men of whom it is perfectly well known beforehand that this sort of thing is not in their line.

In another and extremely important respect the want of resemblance to the conditions of a real campaign was very strikingly apparent. In real warfare all authority is centred in the General commanding, and the whole business of the army is conducted by his staff. This peace campaign was conducted entirely by the War Office. Our army is perhaps the most department-ridden army in the world, and the extent to which centralization is carried was never more conspicuous than on the present occasion. The arrangements for feeding the troops, for hiring transport, for employing artillery to aid the controllers, for settling what lands should be occupied and what respected—all these details were arranged entirely in Pall Mall, and the Generals had nothing to do but to receive charge of the troops they found placed under their orders. We doubt if from first to last the military authorities, most of whom, as well as their staff, only took up their appointments when the manœuvres commenced, had more than the vaguest notion of the cost of the performance. Their functions were limited to simply knocking the troops about after they and their appliances were collected on the ground. Is it surprising if our Generals, accustomed to be kept thus in leading-strings, and invested with only the merest shadow of responsibility, should so often exhibit perfect helplessness when called into the field? To the ordinary looker-on a General may perhaps appear a very imposing functionary, but in most respects he is merely the channel of communication between the representatives of the different departments nominally under his orders and the office in Pall Mall; and it would be difficult to specify a single point in which he possesses any

real power, except that perhaps of fixing the hour at which his brigade or division shall parade. But does a force proceed on active service, the General becomes at once transformed from an imposing nobody in a red coat into a great personage charged with the most responsible functions which it can fall to man to perform. Suddenly invested with real instead of nominal command, the dispenser of patronage and promotion, he now holds the power of life and death over his troops. And this is perhaps the smallest part of the change. When the army lands on a foreign shore, the whole system of supply also undergoes a complete transformation; the Treasury and War Office clerks, who up to this moment have centralized all authority and power in everything down to the minutest trifles in their own hands, retire at once into their proper insignificance, and the whole burden of moving, feeding, and housing, possibly of clothing the army, as well as of leading it against the enemy, falls on the shoulders of the commanding General. Every reader of the Wellington or Napoleon despatches must have observed that this business of transport and supply occupies the commander's time and attention in a much greater degree than any other part of his duties, and what happened in their case occurs in every campaign; but for efficiently dealing with it our Generals are, in most cases utterly unfitted by previous training and occupation, while the subordinate departmental officials who have to carry out their orders, brought up as they have been in War Office leading-strings, and accustomed to act in a narrow circle hedged in by routine, are seldom fit to run alone. Here and there a General may have learned business habits, in Parliament or in the management of private property; but in the case of commanders who have shown a capacity for organizing as well as fighting, we shall generally find that they have been something besides mere soldiers. Not to mention Wellington and Napoleon as examples of men whose training was quite as much *in politics and administration* as in war, we may cite the march to Magdala as an instance where success was probably in great measure due to the fact that the commander of the expedition had passed a large part of his life in other than military pursuits, and had been accustomed to public affairs on a large scale. So it will always be found to be the case. The efficiency of the British Navy, and the readiness and resource which naval commanders are accustomed to exhibit, are probably due in great measure to the fact that the captain commands the ship as well as her crew, and has constantly to exercise a varied responsibility both in peace and war. And this is what we have to aim at in our military administration, if it is ever to become effective. Our Generals must be practised in something more than moving their men about a given piece of ground two or three days in the year, if they are not to prove helpless in the business of organization when placed in the field.

This, then, is the further direction which should be given to our camps of exercise, if they are to become really useful schools for the business of war. Nor should there be any real difficulty in effecting such a development of the scheme. There is no reason, to name one point for example, why the grant of public money for the camp of exercise should not be placed at the disposal of the General commanding, to be laid out by the local staff under his direction for the needful carriage and supplies, without the intervention of any War Office officials. The operations would then, as regards the commissariat at any rate, resemble the course of an actual campaign; and we may be pretty sure that under such a plan the troops would at least get their meals with regularity.

Of course it will be objected that this suggestion for placing money credits at the disposal of military officials, and thus investing them with a certain amount of financial responsibility, is opposed to the cardinal rule that the finance of the army should be controlled by civil authority; and should such a measure be proposed, we must be pre-

pared to hear an outburst of solemn platitudes about the violation of constitutional principles involved. We may, therefore, raise a protest beforehand against the attribution of any weight to what, if looked into, will be found sheer nonsense. No one, we presume, is silly enough to suppose that if the General commanding at Aldershot or Dover were authorized to spend fifty thousand pounds, any danger would arise of a *coup d'état*, of an Aldershot Monk marching upon London with the money in his pocket, to trample down the British Constitution. The danger to England is no longer that armies or governments should be too powerful for its liberties; we now seem to be falling into quite another form of danger, that of breaking down from sheer inaptitude on the part of anybody to do anything more than talk. The utmost danger that the greatest stickler for tradition and principle could foresee, would be, we may suppose, that more money might be spent than was sanctioned. But the assumption implied in this tall talk about constitutional principles, that soldier-officials always want to be spending money, and that civil officials ought to be employed to prevent them, we take leave to say is a perfect delusion. In India, where army finance is on a much more simple and effective system than here, the controllers of the military expenditure, the rigidity of whose audit has become proverbial, have always been military men. And here too they would be found quite as careful guardians of the public purse, if placed in charge of it. After all, it must be remembered that the object of maintaining an army in peace time is to prepare it for undertaking war with efficiency; and even if the sort of plan we have hinted at were to be attended with some direct loss of economy, the indirect saving would be great, if it released our Generals from the childish state of department-ridden tutelage in which they are now retained. But, in fact, the presumption is all the other way. The present system, under which the War Office controls itself, is unquestionably quite opposed to sound economical principles. There is, indeed, the vague and imperfect check exercised by the Comptroller-General of the Exchequer, and ultimately the review of all expenditure by parliamentary committees; but these checks on financial irregularity would remain in force in any case; and it is not in the final audit, but in the check on the first application of the different sums voted for the army, that the present system is really weak. The War Office consists of a huge congeries of departments, the heads of which transact all business in the name of the Secretary of State; so that if any irregularity be committed the offence is already condoned, since the fiction is always maintained that it has been done by order of the very authority who should properly control such proceedings. But if the spending took place outside the office, and that overgrown establishment were reduced to manageable dimensions, of a size sufficient merely for supervision of those entrusted with executive functions, then executive responsibility and administrative control would occupy their proper relative positions; and so far from any loss of financial control accruing, it would be much more efficiently exercised than at present. It is well understood, for example, that the expenditure incurred for the late manœuvres has largely exceeded the sum voted by Parliament for the purpose. This excess may have been incurred beneficially, but that is beside the present question; what we are now concerned to observe is, that there has been no financial control exercised in the matter; whereas if the grant had been made over to any specific general officer to spend, with a superintending, and not, as now, an executive War Office to watch him, we may be sure it would not have been exceeded without at any rate the matter coming formally under review of the controlling authority. As matters now stand, the Secretary of State will probably find that he has sanctioned a great deal of expenditure in one way and another without any specific or formal sanction by proper authority.

But the case goes much beyond camps of exercise. If ever the British Army is to be organized on an efficient and yet economical footing, it must be by a radical process of decentralization. Some War Minister must be found with sense and firmness enough to carry out a self-denying ordinance, and to transform the overgrown department he rules over, from an office overburdened with executive details, to one of manageable dimensions, charged only with duties of supervision. We pride ourselves on being a practical nation and adepts at business, but our army administration, when contrasted with what has been accomplished in other countries, may well tempt us to ask whether our common sense and aptitude for business have not passed over to some other nation. Seventeen years have gone by since the Crimean war, and we are really no nearer than we were then towards proper military organization; the first principles of the art have yet to be introduced. And it is curious to remark that while army affairs have been criticised to weariness in Parliament, and reforms of all kinds propounded, the greatest defect of all has remained almost unnoticed. The cost of the household cavalry, the bloated list of Generals, the wrongs of the artillery—these and other defects are dwelt on with nauseating frequency; but, strangely enough, no reformer has raised the cry for that decentralization which is the real want of the army. Merchants and manufacturers accustomed to do business on the principle of employing good agents and then trusting them, have probably no conception of the degree to which over-centralization has been carried in the British Army. Engineers can hardly drive in a nail, nor commissaries issue a wisp of straw, Generals can scarcely move a corporal's guard, without previous reference to the rabbit-warren in Pall Mall; quires of foolscap may be expended in discussing the momentous question, whether a brigadier is entitled to an extra barrack-table for *his office; every* voucher recorded for *payment throughout the* empire is passed on to the same central destination, to form part of an audit ineffective because distant from the scene of outlay. And all this is not to satisfy the demands of some great administrator with an unlimited capacity for governing, some Napoleon or Frederick who holds all the business of the army in his grasp, for whom no combination is too large, and no detail too small. Our army is governed by a civilian generally of commonplace ability, who comes and goes as the exigencies of party determine, who never understands and seldom pretends to concern himself with details; all this controlling and centralizing and overgoverning is to satisfy the demands of a number of irresponsible officials, who never issue an order in their own name, and are, as often as not, at loggerheads with each other. And all this waste of power and waste of money—for the cost of the controlling departments is out of all proportion to the size of the army they have to deal with—are merely for administration during peace. Let war break out, and the army be despatched to foreign soil, and all this cumbrous machine at once collapses. The War Office officials sink into obscurity; the Generals emerge from their bondage to the exercise of an unlimited power and responsibility for which their antecedents and training render them wholly unprepared; rules and regulations are thrown to the winds; and unless a Wellington or a Marlborough comes on the scene, the confusion and mismanagement which arise are even worse than the circumlocution which they succeed. This is what happened in 1854; there is little reason to hope that it would not occur again.

The true aim of army reformers should be, then, we conceive, to secure a thorough decentralization of our military system; and, paradoxical as it may appear, we believe that if an Act of Parliament were passed to limit the War Office establishment to a couple of dozen clerks, the first step would be taken towards effective army reform. But this is not the place to indicate the exact mode in which reforms may

best be effected; it is sufficient here to indicate the want; and provided the true principle be distinctly kept in view, and all detailed arrangement made subordinate to it, the result cannot be otherwise than satisfactory. We may just notice that the Prussians have hit upon a system in which the principle contended for may be discerned at every point. The system may not be applicable to us, but the leading idea should be the same. In Prussia, side by side with the principle of decentralization is that of maintaining a complete chain of responsibility throughout all grades. The corps commander has his specific powers, which are not encroached upon by his superiors, and so on with the division and brigade generals. Even the captain of a company in Prussia possesses a degree of independence in his command which is quite unknown in our service. The chain of responsibility extends throughout the army, from the Emperor at the head down to the subaltern with his company-section. With us the only chain recognized is of a sort of which all the links are fastened to one staple.

Everybody has heard how Von Roon, the Prussian War Minister, was found smoking a leisurely cigar the day after war was declared, because, as he explained, all necessary orders had been given, and everybody throughout the army knew what had to be done. The story embodies in epigrammatic fashion the success of a thoroughly decentralized organization; and as another illustration of the sort of difference produced by working an army on common-sense principles in peace time, we may cite the account given by an officer, himself distinguished in arms, and a most competent judge, who was present with the German army at the outbreak of the late war. What most struck him, he said, was the entire absence of fuss. He joined the troops just after the battle of Spicheren, when they were hurrying through Saarbrücken, pressing on to the front, flushed with the exciting news of a first victory. If ever there be a time when a certain amount of over-activity *would be natural* and excusable, it would be under such conditions, before an army has settled down to the realities of campaigning, and when the attention is strained to catch every indication of coming events. But nothing of the kind was visible here. Our informant occupied the same room in which the commander of the army corps marching through Saarbrücken was taking his luncheon, and the old gentleman was seated there quietly discussing his meal, as if there were no thought of the largest army the world has ever seen moving on outside. Officers came in and made their reports, and the General now and then wrote a brief pencil-note in reply, but the whole proceeding was done in as calm a fashion as if he were answering a dinner invitation. Outside it was just the same. There was little or no galloping about of staff officers, no shouting of orders; everybody seemed to know what his orders were, and how to carry them out without interference from any one else. Contrast such a picture with the scene presented by our late manœuvres, ushered in by the pompous announcement that the War Department officials were working night and day upon the preparations—preparations with which properly they should have had no concern; officers arriving from all parts of the kingdom to take up some duty, the very nature of which was unknown either to themselves or the troops they were associated with; still more, contrast it with the state of things when the manœuvres commenced, the transport department not knowing from one hour to another what they meant to do or how they meant to do it, the troops always holding well-justified doubts whether at the end of a few miles' march there would be anything available to eat; still more again, the spectacle presented by staff officers riding about in a helpless state, inquiring of every passing stranger where their General was to be found—the General himself, on one notable day, riding about in an equally helpless state, asking where was to be found the enemy. The cause of the difference is plain: in the one case people were acting with the coolness that is born of habit; in th

other everyone was under the exciting influence of novelty. And if it be said that the comparison is not a fair one, because the Prussian army corps are permanent organizations, and General, staff, and troops are all well acquainted and accustomed to work with each other, whereas in our case, staff, regiments, and departments were all brought hurriedly together—this admission is just the very point contended for. The scene lately enacted round Aldershot faithfully represents what would take place on a larger scale were the army suddenly called on to take part in a European war—an impossible contingency, according to our present Premier, but still one which the rest of the nation are resolved should be worth providing against; and the confusion which occurred at Aldershot, the want of mutual understanding between the staff and the troops, and, above all, the inefficiency of the great civil department without which the fighting part is helpless, show with perfect significance that the real work of organization has yet to be undertaken. We cannot, and need not, imitate servilely the Prussian system, which is unsuitable to the conditions involved in our Colonial and Indian service, but the principles which underlie it are applicable to all armies. Meanwhile, till some radical change is made, our military administration must be regarded as on its trial, and it remains to be seen whether the nation still possesses force enough to carry out a plain reform essential for the maintenance of its position among the great European Powers, or whether, as some declare, our efforts can only culminate in talk, and we are good only for spending money blindly, without knowing how to get a return for it.

We have made no reference here to the question of reserves, and to the fusion of the militia with the line, because, although these are matters of great importance, they are still, in truth, matters of detail, which will not be difficult of settlement when once army *administration has* been established upon sound principles. Indeed, that sort of localization of all branches of our forces which is involved in any comprehensive system for forming army reserves, would naturally flow out of any thorough plan of administrative decentralization.

We would add one word more. Any one who watched the troops under canvas during this late exercise might have satisfied himself, had he any doubts on the subject before, that whatever may be our faults of organization, the military unit—the regiment—and the fighting elements are as sound as ever; and those who watched how the troops were cared for by their officers will probably have discovered that in the British regimental officer the nation has got an uncommonly good article for its money. Even in the matter of education, which is supposed to be their main deficiency, we believe our officers have kept more abreast with the times than people generally give them credit for. Indeed in some most important respects it has gone further than most armies. In all physical respects—in the use of their eyesight and limbs, as riders across country, we venture to believe that the officers of the British Army are unrivalled, while for gaining knowledge of country there is no training equal to fox-hunting. Depressed and superseded by the relative rank so profusely bestowed on the non-combatant branches, the British captain and subaltern, although reduced to comparative nobodies, perform their duties, often tedious and always monotonous, with a zeal and thoroughness that leave nothing to be desired. It is this high standard of duty, extending through every part of the regimental system, which renders our battalions model units, and the only complete specimens of good organization to be found in the army. What we now need is statesmanship adequate to do justice to the excellent materials at its disposal; sagacity and determination of a kind sufficient for welding them into one harmonious whole.

chief) sowed such jealousies between them for his own enjoyment, that poor Master Rambone had taken to drink, and his wife was so driven that she almost did the things she was accused of. Very seldom now did either of these two great parsons come to visit Sir Philip Bampfylde. Not that the latter entertained any ill-will towards Chowne for the matter of the warrant. For that he blamed his own son, the Squire, having received Chowne's version of it, and finding poor Philip too proud and moody to offer any explanation.

We had not been at Narnton Court more than a night, before I saw the brave General; for hearing that I was in the house, and happening now to remember my name, he summoned me into his private room, to ask about the Captain, who had started off (as I felt no doubt) for the castle of Lord Pomeroy. I found Sir Philip looking of course much older from the seven years past, but as upright, and dignified, and trustful in the Lord as ever. Nevertheless he must have grown weaker, though he did his best to hide it; for at certain things I told him of his favourite son, great tears came into his eyes, and his thin lips trembled, and he was forced to turn away without finishing his sentences. Then he came back, as if ashamed of his own desire to hide no shame, and he put his flowing white hair back, and looked at me very steadily.

"Llewellyn," he said, "I trust in God. Years of trouble have taught me that. I speak to you as a friend almost, from your long acquaintance with my son, and knowledge of our story. My age will be threescore years and ten, if I live (please God) till my next birthday. But I tell you, David Llewellyn, and I beg you to mark my words, I shall not die until I have seen the whole of this mystery cleared off, the honour of my name restored, and my innocent son replaced in the good opinion of mankind."

This calm brave faith of a long-harassed man in the goodness of his Maker made me look at him with admiration and with glistening eyes; for I said to myself that with such a deep knave as Chowne at the bottom of his troubles, his confidence even in the Lord was very likely to be misplaced. And yet the very next day we made an extraordinary discovery, which went no little way to prove the soundness of the old man's faith.

AUTUMNAL MANŒUVRES.

THE autumnal manœuvres of last year were the first of the kind which had ever been attempted in this country. They did immense good; and they promise, if regularly continued, to do more. Putting even only 30,000 men annually in the field for a fortnight or three weeks, tests, though in a small yet in a sure way, every part of our military system. It teaches all those engaged what are the weak points of that system, and what are the strong ones —what needs to be amended, and what only requires to be let alone. If properly utilised, we should be able to start each year from the basis of the experience acquired during the preceding one. But to do this we require to "take stock," as it were, of the results of each training, and to utilise the knowledge thus obtained as the platform from which to make a fresh start.

Any attempt, however humble, in this direction may perhaps be of use, as a means at least of inducing other and more competent judges to grapple with the subject. With this view we shall first briefly summarise what seems to us the direct results which may fairly be deduced from the experience of last season, and then proceed to enter upon the more debatable ground of the principles which should be kept steadily in view in framing those for future years.

It may be well to premise that, this being a first attempt, the whole force, in excess of the usual garrison, intended to take part in the manœuvres was sent in isolated regiments, battalions, and batteries to Aldershot, there to be organised into divisions and brigades, provided with staff, and supplied with transport—in fact, made into a movable military machine—for the occasion.

It may also be well to observe, what a moment's reflection will show, that the great points in which experience is to be gained, and therefore improvement acquired, are in those operations which are carried on out of range of fire. In all these, embracing the important ones of organisation, movement, encampments, outpost duty, strategy, and tactics, up to the moment *when the troops close under a heavy fire*, the operations exactly resemble war, and form the best possible preparation for it.

But for actual battle itself, they do not afford an equally sure guide, or produce equally satisfactory results. You cannot here have the real result of fire, and without that it is impossible to act in the way in which you would in actual war. The troops, unchecked by the effects of shot and shell, invariably and necessarily approach each other in a way that they could never do in combat (exactly the same thing has been observed at all the great Prussian autumnal manœuvres); and hence the lessons to be derived from this, the most picturesque and interesting portions of the whole, are not equal in value to those derivable from the more prosaic but really useful anterior movements.

Let us not be misunderstood. We are very far indeed from saying that much valuable tactical instruction may not be derived from such movements.

No one who saw Hope Grant's ready stand, when, turning unexpectedly to bay on the first day of the operations on Gravel Pit Hill, he suddenly massed his batteries beneath the tall pines there, and

from the iron semicircle poured forth a very sheet of fire on Staveley's astonished ranks; or who witnessed Marshall lead his mail-clad troopers, in glittering lines, over the low green swell hard by the Chobham camp against the head of Baker's advancing horsemen, when he scattered his light hussars to the four winds of heaven; or who gazed on Lyson's ready rush on Staveley's unguarded flank on the last day of all, when he won the bare brown summit of the Fox Hills, and led on the magnificent advance of the 42d Highlanders,*—will say that great lessons in tactics were not taught in that week.

But we do say that they are not so surely taught, and cannot be so unhesitatingly accepted, as those which are given out of the range of fire.

These matters being premised, we are inclined to think that the following observations will be dissented from by few who had any share in those manœuvres:—

I. It would conduce much to the interest, and add much to the good to be derived from them, if the troops were, from the first, divided into two opposing forces of equal, or *nearly equal*, strength.

There is little room for the display of generalship against *overwhelming* numbers, and there is little encouragement to exert it under such circumstances.

A certain amount of inequality in the contending forces will stimulate, but too great a one will crush, the efforts of officers in command of troops so placed.

No way, however, of bringing about this equality is so bad as that practised during the last days of the late manœuvres, when a division was dissolved and divided between the contending parties.

As the troops are to be in the end so they should be from the beginning—remaining always on the same sides, in the same organisation, and under the same officers. Above all things, let changes in the command, and hesitation and indecision on this subject, be avoided when the operations have once commenced. Such matters cannot be too much thought over before, or too *rigidly adhered to* after, the work has begun.

II. Brigades should, under no circumstances, consist of more than three, or at the utmost four, battalions. Those employed this year were much too large and lumbering. They were generally composed of five or six battalions, and were in fact divisions with only a brigade staff to work them—a convenient economy for the War Office, but a deplorable arrangement for the troops.†

III. The reserve forces should not be mixed with the regulars in the same brigades (except in rare and exceptional instances), but should form separate brigades of their own in the same division.

When you mix in the same brigade regiments in a totally different state of drill, discipline, and consequent efficiency, you commit an equal injustice on both.

Either the efficient regiments must be kept back abreast of the capabilities of their weaker brethren,

* Much good-humoured "chaff" took place round the camp-fires that night on the failure of that division in which "all the talents," from Abyssinia to the Red River, had been united.

† It may be said that the Prussian brigades consist of six battalions, but this is a misuse of terms. The Prussian regiment of three battalions, under its full colonel, corresponds to our brigade under its brigadier. Their brigade of two regiments corresponds to our division of two brigades; and their division of two infantry brigades, with cavalry and artillery, will correspond to our corps—when we get one.

or the less efficient ones must be exposed to a strain to which they are not equal, and which will do them much harm. You must learn to walk before you can be taught to run. If you chain a man and a child together you will sorely diminish the efficiency in their own spheres of both.

But when the regular and reserve forces are employed in the same division, but in separate brigades, then it becomes possible for an able division leader to apportion to each work they are fitted for, and thus to secure progress and instruction for all.

This was very apparent last autumn on one or two occasions when the reserve forces were handled in separate brigades, and more particularly on the day of the attack on the intrenched camp at Chobham.

When possible, militia and volunteers should also be formed in separate brigades. They have quite different characteristics, which render their acting together not in all respects desirable or advantageous.

Should it ever be considered advisable to employ divisions of more than two brigades, then a good formation for one would be in four brigades—two of regulars, one of militia, one of volunteers.

IV. The reserve brigades should be commanded by very carefully chosen officers (if possible by the colonels employed on the staff of the reserve forces), who should be each assisted by *two* staff officers; these officers being instructed that they must take much more charge of, and render much more assistance to, the reserve regiments than they would do to line ones in similar circumstances; and the same instructions should be given to the Control officers of such brigades.

Three good, steady, old line regiments will pull a respectable, but not very bright, brigadier through much; but it requires a thoroughly able, efficient, and active commander to handle a reserve brigade with credit to himself and profit to those under his orders.

V. Great interest was excited as to how the Control Department would perform its duties in the two great branches of Transport and Supply; and every one, we think, who has considered the matter impartially, will admit that it acted with the greatest zeal and energy, and that, on the whole, its efforts were successful.

In regard to Transport, the means at its disposal were of four kinds.

1. The regular Transport of the Department. This was admirable. Its only fault was that there was too little of it.

2. The extra Transport provided by the purchase of horses for the occasion. This was almost undistinguishable from the former. The waggons and harness were Control, and the drivers Army Service Corps men or soldiers. When the horses were sold at the end of the manœuvres, we understand that it was found that this was much the cheapest way of supplying it—much more so than that of hiring.

3. The Auxiliary Hired Transport. This was the weak point of the whole. It proved both expensive and inefficient. Its great fault was its inequality. Some of the horses were very fine, many very bad; but the great evil was the extremely defective state of the harness, and often unsuitable nature of the carts.

Had the operations been conducted exclusively along the great highroads, this transport would have answered fairly; but for country cross-roads it was quite unsuited. In deep ruts, over steep hills, and in swampy passes, the rotten harness was continually giving way,

and many of the waggons breaking down.

This proves, not that this kind of transport is not of use, and of great use, but that it should be employed only under the circumstances suited to it.

So long as the cartage is along the great main lines of road it will work well; when turned into the cross-roads it will break down. That is, for all transport *a day's march or more in rear* of the operating force, it will do, for at that distance it can be almost always directed along good roads. But for transport within that radius—that is, when the waggons must follow the actual course of the columns by indifferent cross-paths and over obstacles of ground—then the only sort to be trusted to is the regular one of the Control, which should be here exclusively employed.

This points to a general principle, and one of extensive application in war, as regulating the proportion in which regular and auxiliary transport requires to be provided for troops. That for the immediate distribution of supplies to the army itself, and for the transfer of those supplies from the main lines of road, or neighbouring railway stations, should be invariably regularly organised and trained military transport. That for the bringing up of such supplies from the distant depots along the main roads to within a day's march of the army may be formed of pressed or hired country transport, if it be well organised and put under the control of efficient and experienced officers, with an adequate and regular staff.

4. The Regimental Transport. This system was tried in two cavalry regiments. The carts and harness were provided by the Control. The horses and drivers were furnished by the corps. They carried all the luggage of the regiment.

This answered admirably. The regimental officers naturally took good care of their own horses—on the efficiency of which their own comfort and that of their men entirely depended.

We believe an extension of this system to every regiment employed in the manœuvres for the amount of transport required for itself would be the best mode of providing for it. To infantry battalions horses would need to be supplied, as well as waggons and harness, but any amount of drivers could be got from the ranks.

The one and only practical objection to this is, that, when the army makes a halt, some reluctance will probably be experienced on the part of commanding officers to surrender temporarily their regimental carts if needed for the general use of the army.

VI. The Supply branch was that which was most subjected to criticism.

1. One point upon which numerous complaints were made by the troops was, the very late hours at which the rations, especially of meat, were often issued.

To understand how a remedy can be applied to this, one must clearly follow the mode in which the rations are distributed.

In regard to the meat, the great difficulty was the Cattle Contagious Diseases Act, which obliged the animals to be killed in London, instead of being sent, as on service, in flocks and herds with the troops.

From London the meat comes down by rail, and is forwarded in waggons to the headquarters of the division.

On the arrival of the column in camp, it is—(1.) brought to the divisional commissariat depot. (2.) From thence it is distributed to each of the assistant commissaries of brigades *in succession*. (3.) By

them it is taken to the commissariat depot of each brigade. (4.) From thence it is issued out to each of the regiments composing the brigade *in succession.*

Now, when the time necessary *to dole out in succession* meat first to the commissaries of brigade, and then to the quartermasters of regiments, is taken into consideration, it is evident at once both where the great delay takes place and where a remedy may be applied.

Were the meat issued *simultaneously* to each of the brigade commissaries at the divisional depot, and then distributed *simultaneously* to each of the quartermasters of regiments at the brigade depots, the length of the process would be diminished more than one half.

By the time the seventh regiment of a distant brigade has been able to draw its rations, and have them conveyed to its own lines, after a long march, darkness will have well set in.

The remedy for this is clear. At the divisional depot there should be meat-issuers for each brigade; at the brigade depot one issuer, at the *very least*, for every two regiments,—so as to enable the issues to be made at both places as nearly as possible simultaneously.

The same remarks apply almost identically to the issues of bread and groceries.

2. Had each regiment its own regimental transport, a considerable saving in time and trouble could also often be effected by sending one of its light carts to the brigade depot to bring back the rations.

But the most effectual of all modes of insuring that each regiment should have its meat issued in good time, would be to have the rations for the next day issued on the evening of the preceding one, put in a regimental cart, carried with the baggage, and distributed to the men the moment it arrives in camp. The meat is so fresh, and the weather in September is generally so cool, that there would be no difficulty in carrying this out.

When a *halt* takes place, regimental transport would get over the difficulty of supplying the troops on outpost duty with their rations. The rations could be cooked in camp for the men on duty, and sent out to them in a regimental cart; or when the men were too far off for this, their rations of wood could be so sent, and then they could cook for themselves.

3. In justice to the Control Department, it must be said that upon almost every occasion it was, we believe, found that the rations were up in good time at the depots. It was in the distribution from the divisional to the brigade depots, and from these last to the regimental lines, that the delay took place. And a good part of this delay was owing to bad arrangements on the part of the regiments themselves—to a want of activity in the commanding officers and quartermasters in finding out when the rations arrived at the brigade depots, and to a want of energy in sending at once for them. Our regimental officers are too much in the habit of sitting with their hands folded until the Control comes and drops their rations into their mouths.

VII. Experience has shown that the present ration of meat ($\frac{3}{4}$ lb.) is too small for the men when in the field. It is enough for them in barracks; but to keep them in health, 1 lb. is absolutely required when they are on service, marching hard and living under canvas.

On the other hand, the present field-ration of bread ($1\frac{1}{4}$ lb.) might be modified. 1 lb. would suffice with the enlarged meat-ration, provided a field-ration of $\frac{1}{4}$ lb. of cheese was also issued. This

would be one of the greatest practical boons for the men.*

VIII. How the soldier should live in the field ought, we think, to be as follows:—

The evening before marching, he ought to receive ½ lb. of bread and his ration of cheese. With this he could have some hot coffee and bread before marching in the morning, and he would take in his haversack bread and cheese enough to have a slight meal at a halt on the march. On coming into camp, he should receive his remaining ½ lb. of bread and his 1 lb. of meat.

After the first day this would practically be done by issuing to him on his arrival in camp 1 lb. of bread (one-half for that day's and one-half of the next day's ration), ¼ lb. of cheese and 1 lb. of meat.

These changes in the system of issuing, combined with the general introduction of regimental transport and the proposed alteration in the ration, would, we are convinced, make the soldier comfortable in the field in so far as the quality and distribution of his food are concerned.

IX. The Control are much in favour of issuing rations to the men before a march for the day of marching; and it is understood they would like also to make them carry their rations for two days in their haversacks.

The system would no doubt be most convenient for the Control, for it would shift the weight from their carts on to the backs of the men, and do away with more than half the trouble of distribution.

But it is entirely opposed to the genius of our army, and is to the last degree unpopular amongst our soldiers.

The practical result with us is, that the men are half starved on the days on which the rations are so issued.

It is quite true that it is occasionally necessary to order the troops to carry their rations cooked with them, because it sometimes happens that they cannot get in until late at night. But this is an exceptional case, to be met in an exceptional manner; and on the principle that they had better on such occasions receive (what it practically amounts to) a half-ration rather than no food.

Every army has its own peculiarities which it is in vain to contend with.

One of the most prominent ones of the British army is, and always has been, that to keep the men in health and strength you *must* carry their rations for them and issue them daily on the spot.

And these national peculiarities are stronger than official red-tape rules and the convenience of departments.

Besides, there is little use in trying to diminish the burden of the soldier's kit if you simply more than make up the weight of his necessaries and comforts taken off by heaping on his aching limbs the raw rations of the Control.

X. The most difficult point to get over is the deficiency in the supply of firewood. Rations without fuel are of no use; and, we hear, it frequently happened that the rations themselves were issued in good time, but the fuel not till late in the evening.

This was owing to the fuel being supplied by contract, and not carried in the Army Service Corps waggons. It is a question requiring great attention, for it proved the

* Preserved meat, sausages, &c., are not liked by the men. They are not accustomed to them, and will not take to them. This is to be lamented, but it cannot be helped. It is a fact, and we must make the best of it.

most serious and insurmountable practical difficulty that occurred during the manœuvres, and that because it was often impossible for the general officer commanding to indicate to the Controller the exact spot on which he would encamp the next day—this frequently depending upon the result of the day's operations; yet without this knowledge the Controller could not direct the contractor where to have his wood-supply stacked.

Such appear to be a few of the conclusions most clearly deducible from the experience of the late manœuvres.

Now for a few words in regard to such undertakings in the future.

We trust never again to see the force intended for these movements brought together for the purpose of organisation to one spot, to be there fitted out in haste, and hurled, half organised, into the field.

If the late campaign in France has taught one lesson more than another, it is that the days of going to war with brigades and divisions hastily formed from independent battalions, with a scratch park staff and new generals, are over. Such a force so formed is simply "fore-doomed to dogs and vultures." This system would do well enough when opposed to one equally bad, but is positively fatal when employed against an army kept permanently in a state of divisional and brigade organisation. This is a bore, it is a great addition to the permanent expense of armies, it disturbs our routine ideas, but *success in war is now impossible without it.*

Let us have no haste, confusion, and vacillation in any such manœuvres as we may have in the future. Above all, no breaking up of organised bodies, no changes and counter-changes of commanders in the field.

Let the place be chosen early in the year; let the force to be employed be then at once fixed; let the mode in which it is to be organised be next determined; and by the month of May at latest, let all the brigades at least, and, when possible, all the divisions, be told off.

I. It may seem at first a hard thing to determine how such a force should be organised; but if the general and governing principle is once got hold of, and firmly adhered to, much of this difficulty will vanish.

We assume that the force will be divided into two nearly equal bodies or small armies.

Now, in preparing any troops for service in the field, the most convenient distribution is into four parts, a right, centre, left, and reserve. And each of these parts again should be subdivided into a first and second line.*

If the army is a large one, each of these parts would naturally be represented by a corps; if moderate in size, by a division; if very small, by a brigade. But in this last case each brigade of infantry would need to be raised from three to four battalions, to enable it to fight in two lines of two battalions each. With the reserve, too, must be the heavy cavalry and reserve artillery.

Thus the arrangement of the whole force into corps, divisions, or simply brigades, depends on two things: first, on the numbers to be employed; and, secondly, on the necessity of a quadruple formation for each of the opposing sides.

A firm adherence to this principle

* It is of course to be understood, that when we use these expressions we do not mean that each of these four divisions should always retain the local place thus assigned to it: that in war should be impossible. But every army in line of battle has a right, centre, left, and reserve; and it is advisable that each of these should be represented by a tactical unit.

will lead us out of most difficulties and doubts on this subject.

II. We attach immense importance to the troops intended for these manœuvres being, not pitchforked into Aldershot or any other central spot for formation, but being carefully formed into brigades always, and when practicable into divisions, *in their own local districts*, and sent up to the general points of concentration fully fitted out for the field in every particular, under the brigadiers with whom they have been serving, with a staff to whom they are accustomed, and with their whole field equipment and transport provided by their own district controllers.

This would lead to every district acquiring that information and experience which is now almost confined to one. It would insure the staff and control in each being fully up to their work; it would keep the battalions together under the general officers and staff to whom they are known, and would induce a regularity and ease in these undertakings which at present they are sadly in want of.

To illustrate roughly what we mean: Say that the local distribution of the army is such that Aldershot could furnish the men for two divisions of infantry and one of cavalry; Portsmouth for one of infantry; London for a reserve brigade of infantry and one of cavalry; Plymouth for a brigade; Dover for a division,—and so on. Let each of these districts be, early in the summer, told what it will have to do, and ordered at once to have the field equipment issued, the staff told off, the brigades formed, and as far as local and financial considerations will permit, everything in readiness. And then, when the time comes, let each district send up to the point of concentration its own quota *fully organised for the field from its own local resources.*

We are quite sure that this arrangement would do more to increase the good to be derived from our autumnal manœuvres, and to prepare our army for being at any time suddenly got ready for service, than any course that could be adopted. To our thinking it would quadruple the value of these manœuvres, and be the first faint step in approach to the perfection of Prussian organisation.

III. Greater care should be taken to post the light and heavy cavalry in proper proportions to the contending forces, and to employ each on its own proper duty only.

In the late manœuvres one division had the whole of our heavy cuirass cavalry and a heavy dragoon regiment assigned to it, without a single light horseman; and consequently, the, to a soldier, misplaced spectacle was exhibited of Life-Guardsmen on outpost duty. We use the words "misplaced spectacle" advisedly, for nothing, we believe, could exceed the admirable way in which the duty was performed by them.* And it is a noteworthy circumstance that, though opposed to some of the most famed light cavalry regiments in our service, under a well-known officer, the hussars never gained a single advan-

* We are well aware that that great military authority, and loyal and chivalrous subject, Sir Charles Dilke, has expressed his decided opinion, founded on his own observation, that the Household Cavalry were useless on this occasion. We, a simple writer in 'Blackwood,' are naturally timorous at breaking a lance with so grave an authority; but we cannot, for the sake of miserable, despised truth, refrain from expressing our opinion, *quantum valeat*, as absolutely and directly opposed to his judgment in every particular.

tage in their own peculiar department, when once hostilities began, over their apparently unwieldy adversaries. But it was "misplaced" all the same, for it was a *waste of power*. In modern war, cuirass cavalry are very necessary, though not in large proportions;* and it is most desirable that they should always be preserved fresh, and with their horses in good condition for those few but decisive opportunities which the end of a great battle usually presents. But this is their duty, and not to act as outposts. And it is as absurd to put a heavy trooper of the Blues as a vedette on a distant hill, as it would be to charge one of their ponderous squadrons with a swarm of light hussars. Division of labour, and keeping every one to his own, is the secret of success. It is an old but a true saying that a "Jack of all trades is a master of none."

IV. There is another point with reference to outposts in regard to which we think attention is necessary. In some of the divisions far too great a number of men were sent on this duty — regard being had either to the total force of the division itself, or to the extent of ground to be occupied. This, we think, is a very great mistake. There is no duty so hard on the soldier as this, especially when carried on by night; but there is none so important, or to which such untiring care and vigilance should be applied. It is therefore to the last degree unwise to overwork the men at it, and so to make them careless on it. To go on outpost duty after a hard day's march —or to make such a march after a night so spent—is about the severest trial the soldier can be put to; therefore it should never be exacted in excess of what the necessities of the case call for, or the requirements of actual service would justify. With this view it should always be stated clearly in orders whether the night is held to be a period of truce or not; and if it is, then no outposts should be sent out until the morning, when they ought to be on their ground an hour before hostilities commence.

It is also to be remarked that, as a general rule, not nearly use enough was made of our light cavalry to retard, envelop, and watch closely the advance of the enemy, so as to obtain exact and early information as to the tendency of his movements.

V. The umpire system is one which is as yet in its infancy with us. When two forces are opposed to one another, umpires are absolutely necessary, for neither party will ever admit themselves to be beat, and without umpires matters would come to a dead-lock.

But the duty of an umpire is one of exceeding difficulty, and requiring both much theoretical knowledge and a great deal of practical experience in the field. The great fault of the system—the one which requires to be most strenuously guarded against—is its tendency to develop over-caution amongst the combatants, to extinguish all dash, to destroy all enterprise.

When a brisk attack is being made on an important point, the chances are that an excited umpire rides up and exclaims: "These men

* The last campaign in France has restored the name and proved the utility of cuirass cavalry in war. So far from throwing aside armour and abandoning heavy horse, the Prussians are moving in the opposite direction. They have found the necessity of a reserve of heavy horsemen; and experience has convinced them that the cuirass, from the glancing of the balls, is practically impervious to rifle-fire, and so imparts a confidence to the men which is of untold value in this arm of the service.

would be decimated—they would be annihilated—the attack is madness. The troops employed must be put out of action — march them off." Now there is a very simple way to avoid this disgrace. Do not bring your men under serious fire. To this course there is only one objection—you cannot win a battle in accordance with it. You cannot "make omelettes without breaking eggs." Consider for a moment how many points require to be thought of before such a decision should be given. (1.) Was the point of attack well chosen? was it on either the strategical or the tactical key of the field of battle, or of any portion of it? (2.) If so, was the force employed sufficient to justify the attempt? (3.) Was it handled judiciously, so as to take advantage of all available cover in moving up? (4.) When the decisive moment came, was it thrown on swiftly and with sufficient energy? (5.) What was likely to be the effect upon it of the fire to which it was exposed; *regard being had to the amount of fire to which the troops firing on it were themselves exposed?* This last is a consideration which we have seldom seen attended to, but which in reality is usually the most important of all. Lastly (6.) Did the importance of the advantage to be gained justify the loss certain to be incurred?

We have heard that on one occasion an umpire of rank directed a position of great strength, and which could have been held with ease against three times the force actually attacking it, to be evacuated because a few skirmishers were creeping round one of its flanks—the fact being that the advance of these men was so absurd that the defenders had ceased firing at them. This umpire was clearly forgetful of the keen saying of the Duke of Wellington: "All have read of, but no one has ever seen, large bodies of men put to flight by a handful of light infantry and dragoons." On another occasion it is said that when a division was engaged in the difficult task of retiring before a superior enemy, the umpire in that part of the field suddenly declared the road by which one of its columns was moving out of bounds, and consequently threw it on the already choked line of the other brigade—the fact being that the umpire was wrong and the division leader right.

These examples show the necessity of accurate information, sound judgment, and extreme care on the part of officers employed on this difficult and most thankless duty.*

VI. It is a mooted point whether the "Chief of the Staff" system should be employed in our coming manœuvres.

A slight attempt was made to test it in one of the divisions last autumn. But though the able officer selected was the very best who could have been chosen, yet the system itself had not a fair trial. It was determined on, and the change to it made when the division had actually taken the field. And so little was the first principle of the system attended to, that the

* There is an umpire rule which ought to be altered before another year. It was held that a railway was an *impassable* obstacle. Consequently, when a bridge under or over one was marked as blown up, no troops were allowed to pass until the two or three hours required to repair it had elapsed. Thus a railway was worse than a river, for you could not pontoon it. Now the truth is that a railway is usually hardly any obstacle at all. If a bridge on one is, in actual war, found to be broken, then the infantry and cavalry are simply marched across the rails at the nearest convenient spot—and so with the artillery. This ought to be the rule, and no more time should be given than that required to move each arm over at the nearest practicable point.

Chief of the Staff was actually also the officer, and the only one, of the Adjutant-General's Department in it. Now the very essence of this system is, that the officer so employed should direct the labours of the various departments under him, but not take into his own charge the details of any of them.

The object of the Chief of the Staff is twofold. (1.) To relieve the general officers in command of all attention to subordinate details. (2.) To secure the working in unison of *all* the different branches and departments required by an army in the field.

Thus it will be seen that the Control, as well as the Adjutant and Quartermaster General's Departments, must be placed under him.

Unless this is done the system is of no use. If the general officer, instead of having his mind free to consider the large movements and plan of operations, and to study carefully the complicated game before him, is to be plagued with the endless references of the Controller on all the numerous petty points in which he requires information, as to what the Quartermaster-General is doing, or the Adjutant-General is thinking about, he had just as well have no Chief of the Staff at all.

It is to weld into one machine, to unite in one movement, the various departments, that a Chief of the Staff is required. He should receive the general instructions and plan of the commander, and be responsible for its communication to, and execution by, the army, corps, or division, as the case may be, *in all its parts.* If he has not power to do this he is but an encumbrance, and is better out of the way.

The system as at present organised for our service is, that the adjutant-general, quartermaster-general, and controller of an army or corps, all take their instructions direct from the general in command, and theoretically are not supposed to have any direct correspondence with each other. That is, the general is to be also his own Chief of the Staff, and to arrange all the details and secure the necessary unity of action of all the departments himself.

Such a system, if carried out to its logical consequences, in a difficult series of operations, would be unworkable by any but an exceptional man.

It may be said, however, that it worked well on a small scale during the late manœuvres.

To this we reply: Yes, it did so; but that was owing to the men, not the system.

The officers of the Control Department were admirably chosen, and were determined to make it work. Able, energetic, sensible, they practically, we have been informed, threw over their regulations, cast down the barrier of red-tape which fenced them in, and took counsel in all things with the heads of the Combatant Staff. They were met in the same spirit; and thus all matters were arranged in common, and worked harmoniously to a single end. But this was due to the men, and not to the measures. Had the men been impracticable, and stood on the letter of their regulations, the result would have been very different. They, in fact, by good sense, adopted voluntarily towards one another that system which the Chief of the Staff is designed to enforce by authority.

But a system which depends for its proper working, not on the regulations of the service, but on the tact and good feeling of those employed in carrying them out, is essentially bad. It is based on an unstable equilibrium. It is balancing the pyramid on its apex.

And what that system when employed in actual war, *and opposed to a more perfect one*, will lead to, we do not require to go far to learn. We have only to look back to the experience of the last two years.

The Prussians had a system such as that which we have described as the "Chief of the Staff system." *The French had one such as we now have.* A Combatant Staff and an Intendance (corresponding to our Control), co-equal and independent; no local decentralisation, and a temporary divisional and brigade organisation. Let us never forget that our present system is exactly the French one—that which led to Woerth, Gravelotte, and Sedan—that which has been weighed in the balance and found wanting; and let any one who would doubt this read the invaluable pamphlet attributed to the late Emperor of the French, or any of the numerous French accounts of the opening of the campaign of 1870, and if he will not then be convinced, we can only say that he would not be so "though one rose from the dead." *

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* "The delays," says the ex-Emperor, "which occurred arose, in a great measure, from the defects of our military organisation as it has existed for the last fifty years, and which revealed themselves from the very beginning. Instead of having, as is the case with Prussia, army corps *always in an organised state*, recruited in the province itself, and possessing *on the spot* their *matériel* and accessories complete, in France the troops composing an army are disposed over the whole country, whilst the *matériel* is stored in different cities, in crowded magazines. In case it is decided to form an active division upon any given point of the frontier, the artillery generally comes from some distant place, and the train equipage and ambulances from Paris and Verdun. Nearly all the munitions and provisions are brought from the capital. As for the soldiers of the reserve, they rejoin their regiments from all parts of France. The consequence is, that the railways are insufficient for the transportation of the men, horses, and *matériel; confusion takes place everywhere.* . . . It was the same with the camping *matériel*, the ambulance waggons, and the officers' transportation. Instead of being distributed among the depots *in the centre of each department*, they were all stored in a limited number of military warehouses. To these defects must be added the *limited power intrusted to the generals in command* of the departments, and to the military commissariat. The most trifling thing required a ministerial authorisation. This administrative routine deprived the generals of the activity and foresight which may sometimes remedy defective organisation. We hasten to add, however, that, to make up an army, *less account must be taken of individual intelligence than of substantial organisation*, moved by simple machinery, and *capable of working regularly in time of war, because it had been habituated to work regularly in time of peace.*"

See to the same effect 'La Campagne de 1870, par un Officier de l'Armée du Rhin,' p. 16, 17; and 'Sedan, par le General Wimpffen.'

THE MANCHESTER NONCONFORMISTS AND POLITICAL PHILOSOPHY.

WHAT is become of political philosophy in England? What is the idea which Englishmen have framed of the Constitution which this country possesses—or, if that is disliked, which it ought to possess? Still more, what conception do men form of the respect which is due to any constitution, even if it were the best and wisest which had ever dawned on their imaginations? These are questions of vast importance. In former times, a settled notion respecting the political institutions by which they were governed was deeply embedded in the mind of the people of England. Certain principles and rules were associated with its existence and its working. Laws embodying those principles ruled for many ages. The machinery of government rested on a deep and solid foundation of common law, usage, and tradition. The nation, as the years flowed onwards, enjoyed a perpetual inheritance of a mode of political life, of a definite system of collective existence, which was continuous in thought and fact, under every variety of the public fortune. Englishmen were united to one another by the recognition of common principles of government. Other nations were administered by other political machinery, each after its own fashion: the English people also had a method of their own, to which they submitted as the established practice whereby the public life of the country was to be conducted. It was thus that arose that respect for law which has distinguished the English in the modern, as it had honoured the Roman nation in the ancient, world. The law, as it was laid down, was reverenced and submitted to: and if a change in its commands was held to be expedient, the prescribed mode for effecting reform was loyally observed. Such changes were numerous, nay, incessant: for the history of the English people is the history of incessant advance, of perpetual adaptation to the altering circumstances of the nation. But the great point to be noticed is the general faithfulness with which Englishmen adhered to the framework of their political government: for even when the changes were most violent, as in the days of the Commonwealth and the Revolution, the law received no upsetting blow—the outlines of the civil government were preserved even during the transitory time of Cromwell. The general result of this long-continued course of public life was the sinking down into the inmost thought of the people of a certain idea of the government of England, of the Constitution of the country, of the form of public life under which every man was born, and which he with rational, if vague instinct, felt he had to live as obviously as his physical existence. Long-perpetuated habit rendered the political portion of his life as natural and necessary to an Englishman as were the social and material under the actual circumstances of the world.

This respect for the Constitution was not founded on any belief in divine right or supernatural origin: its foundation was nothing deeper than actual existence and long usage; but that was deep enough. In England, as in every other country of the world, governments for the most part have sprung up by what may be here called accident, by the circumstances of the day, by the chance forces at work in the actual civilisation of the period.

A SKETCH

OF

THE AUTUMN MANŒUVRES OF 1871.*

BY

CAPTAIN W. S. M. WOLFE, R.A.,

BRIGADE-MAJOR, SCHOOL OF GUNNERY.

"L'Artillerie prend sa place."—*Napoleon I.*

THE motto before you was one of the tersest, and most comprehensive of the military aphorisms that Napoleon I. ever uttered; and now, at a time when the power of artillery has increased so immeasurably, and the results of the recent campaign were mainly attributable to the scientific use of artillery, its repetition comes somewhat strangely; more especially as the motto, in French, was to be seen emblazoned on the triumphal arches that were erected to welcome home the victorious army of Germany, after the conquest of the descendants of that army, with the ancestors of whom, the originator of the maxim had crushed their forefathers.

Let us see how the motto applies to the recent campaign at Aldershot.

For years, a constant agitation had been kept up by artillery officers as to the greater development of their arm, but unsuccessfully, and up to this summer was to be seen the senseless practice of what was called "artillery conforming to infantry." No one knew what was meant by this process, and the result was that field artillery with accurate and long shooting rifled guns were "sentenced" (and I use the word "sentenced" advisedly, as it meant complete destruction), to march side by side—*i.e.*, the leaders' heads in line with the front rank of the lines of infantry; halt when they halted, and move when they moved.

This pernicious system had become so fixed, that no ordinary authority had apparently the power of changing it; but at the outset of the campaign, the "cry of lamentation" from captains of batteries and others "went up," and on the recommendation of Sir Collingwood Dickson, K.C.B., V.C., who was appointed Major-General Commanding the Artillery for the manœuvres, His Royal Highness the Field-Marshal Commanding-in-Chief was pleased to cause the following order to be promulgated to the commanders of corps, divisions, and brigades.

* Lecture at Shoeburyness on the 2nd October, 1871.

Memorandum relative to the employment of Horse and Field Artillery.

Memo. General officers commanding divisions or detached brigades should indicate to the officers commanding artillery under their orders, the general object of the movements about to be executed, and these officers should give directions to the captains of batteries as to the best mode of co-operating with and supporting them.

Officers commanding batteries should be permitted (under the direction of their own commanding officers) to use their own judgment in selecting the best positions to enable them to operate with advantage either in covering an attack or retreat, conforming of course as much as the nature of the ground will permit with the movements of the corps to which they are attached.

Any special directions received by the officer commanding artillery from the general or other officer in command of troops, relative to any change in the disposition of the batteries during the movements, will of course be promptly carried out.

No battery ought to be exposed to the risks of infantry fire, unless under unavoidable circumstances which occasionally occur in action.

By command,

C. R. EGERTON,

Major-General,

Deputy Adjutant-General.

ALDERSHOT, 17th September, 1871.

I fancy the memo. was not kindly received in all quarters, yet the advantage of it was most apparent; as it not only allowed the commanders of batteries to cover the movements of their infantry in an effectual, professional, and scientific manner, but it released the infantry commanders from having to drag about with them an "incubus" which they could not get rid of, and knew not how to use.

As I had the honor of serving on the staff of Sir C. Dickson, I had the opportunity afforded me of collecting matter for the following few remarks, which I hope will interest you, and at the same time give some a clearer insight into the execution of the scheme than could have been gathered by the daily and desultory reading of the newspapers. Of course all the movements and operations of which I propose to make mention did not come under my personal observation; but from subsequent conversation with officers who were eye-witnesses of those I did not see myself, I hope I shall be able to place before you concisely the manner in which the plan of the campaign was executed.

It is generally allowed that the actions of all public men are liable and open to fair criticism, and general officers cannot claim exemption on this point; but at the same time, the first duty of a soldier, namely discipline, forbids anything like offensively hostile criticism, and I venture to hope that nothing I shall say may be construed in the smallest degree to a want of strict discipline and subordination on my part.

I propose to follow as nearly as possible the daily movements of each corps; and I use the word corps, because each separate force represented more nearly in its composition a *corps d'armée*, although a small one, *than a division*, which does not usually contain portions of all branches

1st, Grant's Corps ... Pirbright (subsequently to Chobham).
2nd, Carey's " ... Hartford Bridge.
3rd, Staveley's " ... Woolmer.

Everyone felt that the presence of three distinct bodies in the field,

and in almost immediate presence of one another would render the conception of a scheme of operations very difficult, as under any circumstances, from the equalisation of the bodies, the forces opposed to one another would be in the proportion of two to one.

HEAD-QUARTERS ARMY CORPS,
Aldershot, 13th September, 1871.

General Sketch of Manœuvres.

General order. The enemy having effected a landing on the south coast of England, has refused the direct roads upon London, and is endeavouring to turn the strong positions between Reigate, Dorking, and the Hog's Back, and so to gain the valley of the Thames, and march upon London.

His advanced corps (the 2nd Division) has reached Hartford Bridge Flats, and the main body (the 3rd Division) is at Woolmer.

A defending force (the 1st Division) has been collected in the vicinity of London, and has moved to Chobham.

Such is the position this day.

On the evening of the 13th the programme appeared, and it was, at a glance, clear that it was based upon false premises, but this was unavoidable, owing to the want of water, transport, and many other incidental matters of that sort. For instance, if the 2nd Corps had ever reached Hartford Bridge, and commanded the passage of the Blackwater, nothing short of a general action would have forced it to retreat, situated as it was on the high road, and as near to London as the 1st Corps; nor would the latter have ever thought of holding Fox Hills or the Hog's Back, were the 2nd Corps where it was, viz. almost in his rear. Again, the 3rd Corps would never have attacked the position of the Hog's Back, but would have advanced to its left front, and have assisted to maintain the 2nd Corps in the position it was fortunate enough to find itself in—a very easy operation, as the capture of a small chain of hills and Farnham would have effected the double purpose of reinforcing the 2nd Corps and turning Grant's position on the Hog's Back and Fox Hills. However, circumstances, as I have before told you, led to the selection and adoption of the scheme by the highest authorities, and it only remained for us to carry it out.

Each corps contained—

3 batteries of artillery,
3 (1st Corps 4) regiments of cavalry,
11 battalions of infantry.

The corps were numerically nearly equal as well as similar in their composition, if you except the 1st Corps, that had no light cavalry and was forced to perform its outpost duties with the heavy cavalry of the guard, who, however, showed themselves quite equal to the occasion. Five batteries of artillery were at first left, for reasons of supply, at Aldershot, and were called generally "the reserve," but on the 16th they were dispersed—three batteries to the 1st Corps, and two batteries to *the 3rd Corps.*

Umpires were appointed to give their opinions, to decide questions as to who were beaten on occasions of collision, and to prevent troops crossing bridges over railways and canals after they had been blown up or destroyed, until sufficient time, as in their opinion, had elapsed for their repair.

General order. THURSDAY, 14th.—The officer commanding defending force having got information of the position and estimated strength of the enemy's advanced corps, breaks up his camp at Chobham, and advancing to Chobham Ridges, threatens its communications, throwing out cavalry to Frimley, Farnborough, and across the canal to Pirbright.

The enemy (the 2nd Division) ascertaining this move by his scouts, falls back across the Basingstoke Canal, and takes up a position near Cæsar's Camp, sending information of the advance of defending force to the main body, which moves to his support, and encamps at Frensham.

FRIDAY, 15th.—The enemy's advance corps continues its retreat, and effects a junction with its main body near Frensham.

The defending force continues to advance, and encamps at Pirbright, throwing out advanced posts to occupy the commanding ridge of the Hog's Back.

SATURDAY, 16th.—The opposing forces being now in contact, the general operations will commence.

By command,
C. R. EGERTON,
Major-General,
Deputy Adjutant-General.

The encampments of these corps up to this time had been made upon no fixed principles of offence or defence, but solely with the view of affording the greatest facilities for water and transport, and if you except a raid made by the cavalry of the 2nd Corps upon the outposts of the 1st Corps, before war was declared, near to Bagshot, peace reigned everywhere. In conformity with the programme, the 2nd Corps retired to Frensham Great Pond on the 15th, and the 1st Corps advanced to Pirbright Common, the latter holding the line of the Hog's Back with his outposts, which consisted of cavalry and weak picquets of infantry. The 3rd Corps threw out videttes as far as the high ground overlooking Crooksbury Hill and Puttenham Common.

HEAD-QUARTERS ARMY CORPS,
Aldershot, 15th September, 1871.

Continuation of General Sketch of Manœuvres.

General order. SATURDAY, 16th.—It is assumed that on the morning of Saturday, the 16th, the 1st Division (defending force) having failed in intercepting the enemy's advanced corps (2nd Division), and preventing its junction with the main body, has occupied a strong defensive position on the Hog's Back, his right being in the direction of Hungry Hill.

The division has been reinforced during the night by three batteries of artillery, and his right will for the day consist of a skeleton force of cavalry and infantry, representing 2000 men.

The 2nd and 3rd Divisions have effected their junction, and finding themselves in

superior force, will make a combined attack on the position held by the defending force.

The 3rd Division will attack to its front, and the 2nd Division will endeavour to turn the enemy's right by a flank movement.

The senior officer of these divisions will regulate the advance.

The operations of the day must not extend beyond the Puttenham and Wanborough Road on the left of the position, and the Beacon Hill on the right.

The main bodies of the 2nd and 3rd Divisions will not move from their camping ground till 8 a.m., nor are the outposts to be thrown beyond the positions occupied during the night till that hour.

By command,

C. R. EGERTON,

Major-General,

Deputy Adjutant-General.

Sept. 16th. At daylight, the corps began to move: the 1st Corps to a strong position on Fox Hills, with outposts strengthened upon the Hog's Back and at Tongham Railway Station. This corps had been reinforced by a detachment composed of odds and ends picked up in the camp, consisting of about 2000 men and six guns. This little force was directed to hold the position of Hungry Hill and Cæsar's Camp, and so at a long distance protected the right of the 1st Corps and the main Farnham Frimley Road from any attempt of the cavalry of the 2nd or 3rd Corps, and had orders, on retiring, to blow up all the bridges across the canal. This flanking force were truly *enfuns perdus*, for it was separated by about three miles from its main body, and would have had the greatest difficulty to escape at all from the grasp of the 2nd and 3rd Corps, let alone to hold the Cæsar's Camp position, which is really one of no strength from the south side.

2nd Corps.—The 2nd Corps left its camp, and passing through Farnham, sending its cavalry by a wide detour to its left, stormed and carried the line of Cæsar's Camp and Hungry Hill, and afterwards descended into the Long Valley and Aldershot Camp and Common, until it was checked by all the Basingstoke Canal bridges being blown up. Owing to the wide detour, and the time necessary to repair the bridges, together with the want of arrangement for its earlier departure, this corps never took part in the affair, but received orders, in the evening, to encamp on Cove Common for the Sunday.

3rd Corps.—This corps marched early, and crossing the Wey at Tilford and Elstead, took up with its right brigade of infantry and a portion of its cavalry, the high ground by Hampton Lodge and Puttenham Common, while the left infantry brigade and a portion of cavalry tried to effect a turning movement by Moor Park and Tongham; but owing to the bridges over the S.W. Railway being destroyed, this flanking force also failed to act in concert with its main body.

That is now the position of the three corps at the moment of collision, in which some of you may recognise a similarity of position with that of the French and Austrians before the battle of Magenta, 1859; only that MacMahon arrived in time, and succeeded in his turning movement.

The 3rd Corps advanced, covered by skirmishers, and drove in the advanced posts of the 1st Corps on the Hog's Back, who retired rapidly, destroying the railway arches and bridges on the main position of Fox Hill; and so cleverly did it manage to effect its retreat that the advance of the 3rd Corps failed to keep it in view, and lost its trail entirely. The right brigade and some cavalry of the 3rd Corps advanced in seeming security, without any feelers, until it found itself within the easy range of the artillery posted on Fox Hill, which opening fire, in a short time destroyed and demoralised this attacking force round Ash Church. The left brigade came up shortly after, and was treated in a similar manner.

The 1st Corps had, up to then, only engaged with its artillery, without calling on its supports in any way; and the umpires decided that the 1st Corps had succeeded in repelling and destroying the 3rd Corps.

Owing either to the want of transport or the want of organisation of it, the 1st Corps was compelled to fall back—leaving the strong position it had so successfully held—to Bisley Common, where it encamped for the night and for Sunday; and here came one of the ridiculous episodes of the campaign—the defender and invader marching peacefully side by side, sometimes actually on the same road, in order that the latter might find its forage and commissariat stores that had been deposited overnight four miles in rear of the defenders' position, and which of course they had too much good feeling to destroy, or to carry off if they could; which however was impossible, seeing that they could hardly transport their own stores.

We have now seen how the first day's manœuvres were rather a *fiasco*, and boded badly for the future.

Sept. 17th. Sunday was a day of perfect rest; not even outposts or picquets were placed.

HEAD-QUARTERS ARMY CORPS,
Aldershot, 17th September, 1871.

Continuation of General Sketch of Manœuvres.

General order. MONDAY, 18th.—The 2nd and 3rd Divisions will continue their operations; their object being to reach the valley of the Thames.

The area of operations is restricted on the north by the London and Southampton Road, and to the east by the Brookwood Station, London and South-Western Railway.

By command,
C. R. EGERTON,
Major-General,
Deputy Adjutant-General.

Sept. 18th. On Monday hostilities commenced. Again was to be clearly traced the pernicious tendency of the existence of three corps. For had the affair been real instead of what it was, the 1st Corps, having the command of the bridges of the canal, could and would have fallen

upon the 3rd Corps, and either have beaten it off its junction with the 2nd Corps or destroyed it altogether; and it would have had yet time, under cover of the broken bridges on the north loop of the canal, to have turned round and smashed the 2nd Corps, as Napoleon I. did in 1814 when protecting his capital. It had the very great advantage of acting on interior lines to either of the others, and was in a position to fight either, without exposing its line of retreat by the Bagshot or Chobham roads to London. However, no such advantage was taken, and it remains only to relate the adventures of this day.

Again the 2nd Corps may be left out of the question, either from its marching too late, or the 3rd Corps attacking too soon; the cavalry only of the 2nd Corps arrived in time to see the end of the action, but not to take part in it, as it become considerably entangled in the swamps of Coldingley Moor.

As soon as eight o'clock—the conclusion of the armistice—struck, the horse artillery of the 1st Corps commenced to shell the camp of the 3rd Corps, which had not then been struck. Stung by this insulting demonstration, the skirmishers of the 3rd Corps advanced and drove those of the 1st Corps across, not only the railway but the canal, the bridges over both of which were blown up; and supported by a fire of artillery—principally at Brookwood Railway Station, where it was well sheltered in pits improvised with sleepers and railway iron—the pioneers and the engineers commenced making a bridge and repairing the others across the canal, but they were compelled to desist until the main body of the infantry of the 3rd Corps had been brought up to their assistance, when they were allowed to cross the canal. And now comes a question whether it was expedient to attack the right flank of the 1st Corps; by attacking that flank, as the 3rd Corps did, the 1st Corps were not only forced back *upon* their line of retreat, but were driven further away from the flanking movement of the 2nd Corps; whereas, had the attack been pushed on the left flank of the 1st Corps, it would have thrown its line of battle into the most disastrous possible position—namely parallel to, and in prolongation with, or *off* its line of retreat, and still more, would have tended to jam it effectually between the attack of the 3rd Corps and the flanking or turning movement of the 2nd Corps.

At any rate, the right of the 1st Corps began to fall back, and eventually was compelled to change front in retreat, harassed by the rapid advance of a demi-brigade of the 3rd Corps. After some desultory fighting, the 1st Corps took up an intermediate position on some rising ground in front of the cultivated lands of Bisley and Lucas Green, where it held its own until the cavalry and some infantry of the left of the 3rd Corps, ever pushing their success, began to outflank, when a general retreat, covered by cavalry was ordered, and entangled as it was in the narrow lanes of the village of Bisley, it is probable that a large portion of the corps would have been destroyed; however, the retreating force took up a very strong position, well garnished with artillery, on the New England and Three Barrows Hills, which being too strong for an attack in front, and the 2nd Corps not arriving *in time to operate,* if you except a portion of their light cavalry, the

operations ceased for the day, and the 1st Corps drew off unmolested to its entrenched position of Chobham Redoubts.

The encamping grounds were that day as follows:—

The 1st Corps at Chobham Redoubts.
" 2nd " Wishmoor—cavalry at Sandhurst.
" 3rd " Barrows Hill and Bisley.

It is very doubtful whether in this day's fighting the 1st Corps could have ever been dislodged from the line of the canal, or that the canal could have been forced by an enemy numerically inferior, let alone been driven from one position to another; and excepting "common rumour," nothing as yet had been heard of the 2nd Corps being in co-operation with the 3rd to compel a retreat, and it would have been better perhaps if the appearance on Frimley Ridges of the 2nd Corps had been allowed to be made, before the 1st Corps was supposed to be driven from the strong position of the Basingstoke Canal. As it was, it had too much the aspect of a preconcerted field-day than a representation of real war.

HEAD-QUARTERS ARMY CORPS,
Aldershot, 18th September, 1871.

Continuation of General Sketch of Manœuvres.

General order. The 1st Division having on Saturday retired from the Hog's Back, and occupied a new position on the Chobham Ridges, was attacked in it this morning and forced further back in the direction of Chobham, where it is supposed to be entrenched.

The 2nd and 3rd Divisions will continue the advance to-morrow, and attack the 1st Division in position, moving from the camping grounds not earlier than 8 a.m.

There will be no limit to the area of operations except those laid down by the "Military Manœuvres Act," and land interdicted by the Commissioners, as clearly shown in the maps which have been furnished to general officers commanding divisions and brigades.

By command,
C. R. EGERTON,
Major-General,
Deputy Adjutant-General.

Sept. 19th. The 1st Corps having fallen back the previous evening to the fortified position already selected, and reinforced by volunteers and artillery, determined to give battle to the now nearly united 2nd and 3rd Corps, although the opportunity yet offered itself of attacking, by a sally from its lines, the two corps in detail. Morning broke with a slight affair of outposts in front of Pibs Hill and Sunningdale Railway Station; for the 2nd Corps, determining this time not to be out of the fight, had taken the initiative, and reinforced by nearly all the cavalry of the 3rd Corps, began to feel their way early across the main Bagshot road. The 1st Corps reinforced their outposts on the right flank, and for a time, supported by their cavalry and artillery, held their own, thereby compelling the 2nd Corps to deploy and unmask all their forces, and drew them on under the fire of the entrenchments.

Perhaps this forenoon's operations was, as a spectacle, the most

perfect, as the weather added much to the brilliancy of the scene, and from the knolls could be seen the advances of infantry, the charges of cavalry, and the play of the guns. Still nothing had been heard of the 3rd Corps, which was really the corps to attack in front, and up to mid-day the flanking or 2nd Corps had been the only one to make any demonstration against the entrenchments; suddenly, however, a detachment of the 3rd Corps menaced the left of the position, and without advancing, drew off the defenders' attention from a junction that was being effected with the 2nd and 3rd Corps. It was felt that although the entire and now united force of invaders would probably have made no impression upon the works, yet that on the occasion of so many troops being assembled together, and taking into consideration the splendour of the day and the favourable nature of the ground for working over, that the attack had not been allowed to develop itself further, but in consideration of the distances marched over, and the distance back to the encamping grounds, that the troops had had enough, and they were ordered back to their encampments.

The nature of the works that sheltered the 1st Corps are worthy of some remarks. They roughly resembled a Y with their flanks resting on the railway cutting and woods, and were shallow trenches connecting works, sometimes redoubts, sometimes small bastions, with emplacements for field guns. The right face of these works were strengthened with detached redoubts, which would have been better had they been open at the gorge, and not exposed to be all of them directly enfiladed by guns placed upon a hill about 1700 yds. distant. The apex of the work was a knoll with triple lines of slight parapet and rifle pits, with a sand-bag screen for a couple of guns, and ill provided with flanking fire. Some of the works were not finished, and the tracing tape and profile had to do duty for earthworks. The lines of defilade had also received slight consideration.

Sept. 20th. This day was one of repose, which the troops, more especially the cavalry, much required.

HEAD-QUARTERS ARMY CORPS,
Aldershot, 20th September, 1871.

Continuation of General Sketch of Manœuvres.

General order. THURSDAY, 21st.—The defending force (1st Division) having yesterday maintained its position, has been reinforced and will this day advance.

The enemy (3rd Division) will endeavour to check the advance, and cover Aldershot.

There will be no limit to the area of operations except those laid down by the "Military Manœuvres Act," and such lands as have been interdicted by the Commissioners.

Each corps will move at such hour as will bring it into the position selected by the general officer commanding, from which to commence his operations, by 9 a.m.

The baggage of both forces is to be considered as neutral to-morrow.

By command,
C. R. EGERTON,
Major-General,
Deputy Adjutant-General.

Army Corps Orders.

ALDERSHOT, 20th September, 1871.

No. I.—ARMY CORPS.

The 2nd Division will for the operations of to-morrow be broken up and divided between the other Divisions, which will be constituted as follows:—

1ST DIVISION—DEFENDING FORCE.

Major-General G. J. CAREY, C.B., Commanding.

CAVALRY.

General His Royal Highness the PRINCE OF WALES, K.G., Commanding.
Colonel Baker, 10th Hussars.

1ST BRIGADE.	2ND BRIGADE.
Colonel Marshall, Commanding.	Colonel Wombwell, Commanding.
1st Life Guards.	10th Hussars.
2nd Life Guards.	12th Lancers.
Royal Horse Guards.	Hants Yeomanry.

2 Batteries Royal Horse Artillery.

INFANTRY.

Major-General His Serene Highness PRINCE EDWARD OF SAXE WEIMAR'S Brigade, with 1 Field Battery.

Major-General LYSON'S Brigade, with 1 Field Battery.

Major-General MAXWELL'S Brigade, with 1 Field Battery.

2 Field Batteries from the Reserve Artillery.

The whole of this force to wear green leaves or heather in their head dress.

3RD DIVISION—THE ENEMY.

Major-General Sir CHARLES STAVELEY, K.C.B., Commanding.

CAVALRY.

Major-General Sir T. M'MAHON, Bart., C.B., Commanding.

1ST BRIGADE.	2ND BRIGADE.
Colonel Seymour, Commanding.	Colonel the Hon. I. Fiennes, Commanding.
2nd Dragoon Guards.	7th Hussars.
3rd Dragoon Guards.	9th Lancers.
7th Dragoon Guards.	

1 Battery Royal Horse Artillery.

INFANTRY.

Major-General BROWNRIGG'S Brigade, with 1 Field Battery.

Colonel STEPHENSON'S Brigade, with 1 Field Battery.

Colonel SMITH'S Brigade, with 1 Field Battery.

1 Battery Royal Horse Artillery and 2 Field Batteries from the Reserve Artillery.

These arrangements will be carried out on Thursday morning, the troops moving at such hours as the general officers commanding the divisions which they are to join may direct.

The baggage will return direct to Aldershot to-morrow morning.

From Chobham, by Pirbright.
From Bisley, by Brookwood.
From Sandhurst, by Frimley.

By command,
C. R. EGERTON,
Major-General,
Deputy Adjutant-General.

Sept. 21st. The 2nd Corps was for this day's manœuvres divided between the other two, and the programme left almost absolute liberty to the commanders of these corps. The 3rd Corps, strengthened by a portion of the 2nd Corps under General Staveley, were to prevent the return of the 1st Corps, reinforced by a portion of the 2nd Corps, to Aldershot.

OPPOSING FORCES.

1st Corps.		3rd Corps.	
Cavalry.....	6 Regiments.	Cavalry.....	5 Regiments.
Infantry	17 Battalions.	Infantry	16 Battalions.
Artillery	42 Guns.	Artillery	42 Guns.

In order to do this, a long line had to be taken up or observed—viz., from the line of the Frimley Bagshot road on the left, to the Pirbright, Ash, Aldershot road on the right—a front of at least seven or eight miles, over nearly all of which every arm could be manœuvred.

I shall for simplicity still call the corps the 1st and 3rd.

The 3rd Corps held strongly the position of Chobham Ridges, with their left on Golden Farmer junction, with a brigade in Frimley and another on Frimley Green, with outposts along the top of the ridges overlooking Bisley Green and the Brookwood Railway Station. These detachments were formed of the reinforcements from the infantry of the 2nd Corps that were joining the 1st Corps from their camping ground at Wishmoor Cross. These detachments were subsequently closed in to their right on the main body, but hardly in time to save being cut off by an enterprising body of lancers who had appeared on their left flank as they were on the march. The commander of the 3rd Corps had rather prejudged the course of events, and had massed his forces on the south end of Fox Hills, as he conceived that the 1st Corps meditated a flank march by Ash into Aldershot, and his idea was at the first borne out by large columns of dust that were seen moving in that direction; but of these we must speak when following the movements of the 1st Corps.

The 1st Corps, moving from their camp, and reinforced by cavalry, artillery, and infantry of the now broken up 2nd Corps, advanced their cavalry until they ascertained that there was no force in their immediate front; then suddenly withdrawing them, they passed them over the canal and railway by the bridges at Woking and Cowmoor, and commenced an advance in three columns towards their left front; these columns caused the dust I have above alluded to, and tended to deceive the 3rd Corps. After the cavalry had made a demonstration to turn the right of the 3rd Corps, the infantry crossed the bridges lower down, and which were now repaired, and marched through woods and eventually deployed across the left flank of the position taken up by the 3rd Corps, whilst a portion moved round their left and rear, and hidden by woods awaited the attack. During the whole of this time the cavalry of the 1st Corps performed their duty so well, that whilst at the same time being perfectly aware of the position they were about to attack, from repeated small dashes up nearly to the guns, they entirely *masked the movements* of their infantry, and prevented any exploration

on the part of the cavalry of the 3rd Corps, who remained *dismounted* in second line. On a sudden, a rattle of firearms announced that the attack had begun, and troops hurrying from right to left proclaimed that the position was attacked in flank. Some infantry had been hidden very skilfully, and made a dash at the wooded extremity of the position, and although numerically weak they effected a lodgment, and were speedily supported by others, while their cavalry slipped round in rear and commenced to show on and to protect their right flank. The attack developed, and the fire of guns showed that the position was turned. The cavalry of the defenders attempted to support their left flank, but were beaten by the ever-increasing cavalry of the attack; and in spite of the concentration of the fire on the part of the reserve artillery of the defence, they were forced to change front and bring up their infantry of their right flank in support towards their left in second line, and so prolong their front. This entirely denuded their right flank, and at an instant the brigade of invaders, that had been waiting for orders, crowned the heights almost unopposed, and completed the rout of the 3rd Corps, who retired to a second position with their backs to the canal, where destruction was inevitable. At this period all operations stopped, and the troops returned to their quarters, huts, and encampments in Aldershot; and so ended the first attempt at manœuvring British forces in the field.

Sept. 22nd. The following day there was a march past, at which all the foreign officers assisted, and were in loud praises of the manner in which the troops turned out, and marched, after the toils of the past ten days.

Sept. 23rd. On the 23rd several regiments left for their own stations, among others the cavalry regiments of the guard, who marched to London in 7¼ hours, a distance of thirty-four miles, thereby showing that they can not only look superb in the park, but can make long marches, as well as their comrades in the light cavalry. A battery of Royal Horse Artillery also marched to Woolwich in one day, a distance of forty-four miles.

It would ill become me, as holding a very subordinate position in the campaign, to presume to criticise the actions of the generals in command, yet I feel that the subject upon which I am now speaking would hardly be completely treated unless I were allowed to make some deductions from what came under my observation.

As you all know, it was an attempt at copying the Prussian system of manœuvres; but tied down as we soldiers are, by what is called "the liberty of the subject," it became impossible to assimilate to, or to copy their system absolutely, or to act as would be done in war time. I allude more particularly to the inability that the military authorities have in this country of billeting troops on the inhabitants. Now this simple want tends to diminish very vastly any similarity between mimic and real war, and it acts very hardly upon the newly formed and somewhat chaotic system of control, by forcing it to find transport for tents and camp equipments, which is perhaps the most bulky of all the *matériel carried* with an army. In future wars it is doubtful whether

time will ever be given for the encampment of large bodies of troops, as was the case 100 years ago. If these manœuvres are to be repeated, it might be worthy of consideration whether any very great hardships would be enforced on the inhabitants of a district by the billeting officers and soldiers upon them for one, or two nights at most. At any rate, the country at large would be the gainer; and to judge by the business done in the villages during the recent manœuvres, the natives themselves would have no objection whatever to the society of the soldiers for a night or two. At any rate, no real experience can ever be gained by the control branch until the conditions of actual war are more closely imitated.

As you may doubtless have heard, there have been shortcomings, and the bringing of them to light can do no possible harm, if done in a fair and proper spirit. It has been too much the fashion to call out, "The control broke down," without waiting to enquire exactly what is meant by the sentence. If it be meant that the system broke down, that was impossible, for there was no system, it is in course of creation; if it be meant that the controllers and their subordinates were lazy or stupid, I beg to offer my distinct contradiction, as no department worked harder, and more cheerfully from before daylight until sometimes long after dark, at the end of which time, they were generally only received with grumbling, as a reward for their exertions; and I may with pride allude here to the self-denial and the zeal shown by the detachment of our own Regiment, lent for the occasion, without whose cordial co-operation the manœuvres could never have taken place.

It was always a difficulty to know where the duties of the control ended, and that of the regiments began, with reference to supply, and this was an endless source of discomfort to everybody. Again, there was a tendency on the part of the Control Department to assume the position of a separate body, responsible only to their own chiefs, and ignoring all military chain of authority. This is an item of most considerable importance, and as soon as that department act under and through the staff of the general, some progress may be made in the administration of the army, but as long as the body assert an independent and irresponsible position, with regard to the military authorities, so long will chaos and confusion exist, besides failing to secure for themselves, the support of the staff, and the confidence of the troops.

Some regiments adopted a system of regimental transport which answered very well; the artillery always did, and I think on the whole fared the best of all the arms employed. I need hardly say that the various tea carts, vans, drays, and shandy drans of sorts, supplied by civil contract broke down utterly in all directions, and were useless, or worse, to the army, whilst their drivers were subject to no discipline nor control whatever; although some of the drivers did their duty conscientiously, and to the best of their ability, they could however never be relied on, and their pace averaged from one to one and a half miles an hour.

I am afraid to think that the staff were hardly free from all blame; *as a rule, the country* was hardly thoroughly explored and known, and

the constant collisions of troops on the march betoken a want of care, both in the selection of the routes to be followed, and the times of departure; whilst the absence of all co-operation in the first two days of the campaign of the 2nd Corps, showed clearly, how disastrous to an army, might and would be the ignorance and the neglect of the primary rules of *logistics*, by the close adherence to which, the Prussians owe in a very great measure, their successes in their last campaign in France.

The mounted portions of the corps were often widely separated from one another, and from their forage, and often had to go an unnecessary distance for water; while the entire encampments were often needlessly extensive, thereby rendering the circulation of orders tedious and embarrassing. The campaign also showed the advantage that would be derived in having one staff corps instead of three departments—viz., Adjutant-General's, Quarter-Master-General's, and personal.

Such maps as were issued were worse than useless; as besides being incorrect in the general features of the ground, they were obsolete, as far as roads and boundaries were concerned, the face of the country having altered so much since the date of their manufacture.

The cavalry, with few exceptions, clung to the traditionary movements in masses, sometimes under the close fire of infantry, and neglected the more important duties of being the eyes of the army: this more particularly referred to that belonging to the 3rd Corps, on the first and last days of the campaign.

The artillery and engineers appeared, if I may be allowed to say so, more at home at their work than the other branches, and this was remarked to me by more than one foreign officer; the issue of the order I read to you at the commencement of the lecture tended materially to develop our freedom of action, whilst it freed the generals from the constant restraint that the presence of artillery seems always to exert on their plans, and their mode of execution.

The infantry of the line marched and went through their work cheerfully and well, and if you except an entire disregard for availing themselves of cover, and a tendency to open fire at very long range, appeared to leave nothing to desire.

The militia showed their very marked inferiority in training, and *physique* to the line; though, probably, with an improvement in the professional knowledge of their officers, and a severer course of training on the part of the men, they might be reasonably looked to to supply vacancies in, and indeed be brigaded with, the line. But it is to be remembered that the militia at Aldershot could hardly be considered as a fair sample of the force.

Of the yeomanry little can be said, either for quantity or quality. Out of the large and much-talked-of body of this force in England, only about 170 put in an appearance, and these were ill-drilled, unsoldierlike men, badly mounted on unbroken, underbred horses, and could not be relied on either for moving as a body or for getting about the country. The force in the field was a direct contradiction to the generally received and ill-founded notion, that every man in the yeomanry is young, active, eleven stone, rides a £200 hunter, and that no country can stop him.

Of the volunteer infantry, such a very small force ever took part in

the operations that one can form no judgment of the value of the force. Suffice it to say, that what were there did very well, and kept up the credit of their stay-at-home brethren. The handful of this force were *volunteers of volunteers*, should be taken as the very pick of this force, and no criterion whatever of what might be expected of it when called out in any numbers.

In conclusion, I am sure you will agree with me in hoping that the manœuvres may become annual, and that such a good beginning may not be allowed to drop; also, that the next may be more assimilated to actual war operations. In order to secure this, it must be an absolute necessity that they be removed for the future from even the atmosphere of Aldershot, and also to a site, where the nature of the country is less difficult to work over. I hope also that the "autumn manœuvres" may induce us to leave off the pernicious system of always crying down our own army to the extolling of other nationalities, any one of whom would have found it hard to have put 33,000 men of such *quality* in the field; and moreover force every thinking soldier to the fact, that now more than ever, there is reason for the maxim of the great Napoleon, that "L'Artillerie prend sa place."

October, 1871.

Authorised Translation.

UPON

THE ART OF OPERATING UNDER THE ENEMY'S FIRE,

WITH AS LITTLE LOSS AS POSSIBLE.

A MEMOIR.

BY

MAJOR TELLENBACH,

THIRTY-SEVENTH WESTPHALIAN FUSILIER REGIMENT.

TRANSLATED FROM THE GERMAN

BY

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Captain Rifle Brigade, Garrison Instructor Aldershot.

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TRANSLATOR'S PREFACE.

THIS Pamphlet, which is attracting some attention abroad, would seem to recommend itself especially to notice, from the fact that its Author describes and analyzes in an original manner, basing his remarks upon facts learnt in the field, the conditions of an enemy's fire, as well as expresses his own views of how they ought to be considered in the formation and handling of troops.

Every nation has its own method of fighting, which is natural to it, and which will always suit its Army better than one slavishly copied from another. The conditions of fire, however, under which all armies must operate are the same, and the study of these may contribute to the solution of how, with an English Army, they can best be met.

PREFACE.

I dedicate these few pages, written during quiet intervals in the Siege of Paris, to my Comrades of the German Army, in the hope that they may be of use.

Professional men will discern that years of practice, reflection and observation—both in War and Peace—have furnished the material for them.

THE AUTHOR.

UPON THE ART OF OPERATING UNDER THE ENEMY'S FIRE, WITH AS LITTLE LOSS AS POSSIBLE.

1.

THE increased execution of modern fire-arms renders it necessary to follow out to the fullest extent the art of operating under the enemy's fire, with the smallest conceivable amount of loss.

2.

The means of diminishing loss under fire, are, according to the order of their value—

(*a*) Rapidity of movement, to which, among other things, a lighter equipment of the soldier would conduce.

(*b*) Taking advantage of places unswept or comparatively little swept, by fire, and of unflanked (or dead) angles in the posting and moving of troops.

(*c*) Offering the smallest and most unfavourable mark possible.

3.

These means may mutually assist, but may also counteract each other.

For instance, the lessening of loss by resorting to cover is counteracted, if making use of that cover detains the troops under fire a longer time than would otherwise have been the case; circumstances being equal, the shorter time that a body of men halt under fire, the smaller will be their loss; and quickness of movement makes it materially more difficult for the enemy to aim and judge distance.

4.

A leader of troops must make himself clear as to the character of the fire he is under in the field. One has to deal there with fire more or less well aimed, and more or less blindly delivered. It is customary to consider the first description of fire merely in relation to the mark aimed at, and the last as thrown away. Both descriptions, however, fill up a certain space of ground with projectiles. Let us call this space the *shot-sphere.*

The shot-sphere of aimed fire changes with the situation of the mark; the shot-sphere of unaimed fire is dependant upon other circumstances for its position.

Troops find protection from fire aimed at them

by taking advantage of the ground, lessening the size of the mark, loose touch, slight depth, and motion; from fire not aimed, or badly aimed, at them, chiefly by avoiding the shot-sphere, as far as possible, or if they are obliged to delay in it, by seeking out the places where the shot fall least thickly.

5.

Let us take the case of a completely open level country. If we imagine the shot-sphere to be divided into portions by horizontal planes, then we shall have portions where the shot fall more and less thickly.

As firing is as a rule too high, the portions next to the ground are those where the shot fall least thickly.

We should confine the troops to these as far as possible.

If, again, we imagine the shot-sphere to be divided by vertical planes running at right angles to the firing line, then, because firing is, as a rule, convergent, the middle portions will be those where the shot fall most thickly, On this account supports are commonly safer behind the wings than behind the centre.

If, finally, we imagine the shot-sphere to be divided by vertical planes, which run parallel to

the firing line, then the portions where the shot fall least thickly will be those near the highest point of the course of the shot; and those where they fall most thickly will be between the mark and the places where the shot strike the ground.

Turning about therefore, while under fire, often leads troops into the portions where the shot fall thickest, whereas by hastening forward they come into those where they fall least thickly. Behind troops exposed to fire is at a considerable distance alone a place of safety.

Moreover, in each stage of a fight we find from a multitude of peculiar causes places where the shot fall more and less thickly, and these may be observed.

6.

The difference in the thickness with which shot fall, resulting from the nature of the ground, is a matter comparatively well known. The art of utilizing cover should be practised by both leaders and men to the most thorough extent; and is of still more importance for troops fighting in close than in scattered order.

Cover is offered by either elevations or depressions of the ground. If these exceed vertically a certain size, they are not suitable it is true for defence, and afford no useful base for attack; yet

they can, on that very account, be most useful as cover. Elevated cover is sometimes so high that no projectile can pass over it, and the higher it is the more ground behind it it protects.

Cover may either run parallel to the enemy's line, or perpendicularly or diagonally to it, and may be connected or broken; but all kinds of cover, although of different value under different circumstances, can be made use of in lessening loss.

7.

The chief maxim in utilizing cover should be—That the attitude of each individual man, and the formation of troops, must be in conformity with the cover at hand, and change with the character of the ground.

Let us first consider ground which gives cover to a brigade in rendezvous formation, the brigade should move forward in that formation so long as it has cover. If the ground changes, and the brigade no longer finds cover, then it must spread out its battalions. In what way? Exactly as the ground prescribes. Perhaps two battalions can remain together, either behind or beside one another. Perhaps one battalion must separate itself 150 paces from the battalion of direction, the other 50 paces. Perhaps one battalion must move out beyond the line of direction—the other remain behind it.

Perhaps for one battalion, the line formation may be advantageous, for another the column, and a third may most expediently move forward in company columns, or in yet more scattered formation; or the second line must even for a moment double in with the first.

If the ground alters, the formation must alter. That is entirely the affair of the battalion commanders, or as the case may be of the officer in command of the brigade.

The brigade will not lose connection because the directing battalion (no longer, it is true, a mere material bond), does not cause battalions to keep in a rigid straight line or at any measured symmetrical distance from one another, but acts as a moral, and therefore so much the more constraining-band according to the following law:—

No battalion should separate itself so far from the directing battalion that there can be any question about their united working, and each battalion must stand at the proper time on the ordered spot and in the ordered formation.

The above law implies a mutual regard among battalions one to the other, in which the battalion of direction takes the lead.

Should, however, the brigade become in reality much separated, then a most excellent opportunity is offered to commanders to give proof of that art, which, at the present day, is an indispensable one of guiding unarranged bodies of troops.

8.

Changes of formation, in accordance with the ground, ought to be made as far as possible in safe places, or at least in those where the shot fall least thickly, and in the *shortest time;* but it is not intended by this that such places should not be taken advantage of in order to give the troops breathing time.

These changes are most quickly made by means of the *Rally* which should be generally understood to mean not the establishment of any close order but the establishment of some directed tactical order. If any one object to this expression, he may choose some other.

The essence of the Rally is the establishment, in the quickest possible way, the method being left to individual will, of some directed tactical order, without the interference of any intermediate authority. To this end signals with the trumpet, as in cavalry, or, perhaps better still, optical signals should be employed.

This rallying can be brought, as experience shows, to a height of perfection which would not be believed; and would serve towards the quickest possible occupation of a position, or formation for an attack, as well as the immediate utilization of any cover which presented itself; and during it, troops offer a more unfavourable mark than while moving regularly in a well-defined form.

9.

The importance of forming and posting troops according to the ground is especially evident with regard to the Reserves. These should be so near that they can take part in the fight, and yet be kept out of fire as much as possible.

A battalion, for example, in single companies, one in line, another in quarter companies, a third in a sort of ball or knot, may be completely withdrawn from the view and fire of the enemy, while a battalion formed closely, and which persisted in remaining in some regulated formation, would inevitably be destroyed.

From these places of the Reserve the ground must be reconnoitered beforehand up to the troops in front, and approaches to the latter protected from view, will frequently be found or can often be made by the simple construction of a passage through a wall or hedge.

Reserves must be careful, upon general grounds alone, to conceal their position from the enemy; but concealment also forms as a rule their best security against the enemy's fire, and protects them even more than cover, which often betrays their whereabouts to the enemy.

10.

In peace we very properly set value only upon aimed fire, and in war we very properly desire our

soldiers to aim; but a leader should be aware, notwithstanding, that the enemy's unaimed or badly-aimed fire has a great importance. The shot which misses its mark can produce effect near it. If it passes over the mark it makes the ground beyond unsafe. Shot do not only produce effect on the mark, but create an unsafe region along the whole line of their course; and unaimed shot kill and wound, as well as aimed.

In any case this fact deserves the greatest consideration, viz., that under small-arm fire we have never to deal with more than 25 per cent. of shot which are aimed. It is on this account, indeed, that we can diminish loss by resorting simply to loose touch, intervals between bodies of men, kneeling, lying down, and stooping; on this account that troops can be led out of the shot-sphere without its immediately following them, and on this account that troops may suffer from fire badly directed against some other mark, and by a slight change of place escape from the shot-sphere.

Even aimed shots are often directed only against prominent cover behind which the enemy is supposed to be, or upon some point which he wants to attack. Under these circumstances it is important to take post in the nearest adjoining spot withdrawn from the view of the enemy, and only to occupy the point in question at the last moment.

In doing this the rally will, we think, be found of invaluable service.

If a fire-arm has no, or only a slight, lateral deviation, then a broad front is only a slight disadvantage against it. If it has much deviation in range, then depth is for troops advancing against it a great disadvantage.

When the direction of the course of the shot has been learnt by observation, troops can be led out of it, or can be so placed, formed and moved that the smallest possible portion of it passes through them.

11.

We have already in other places mentioned several ways of rendering it more difficult for an enemy to obtain aim. If a man covers his troops, he both conceals them and offers a small mark. Thus lying and creeping makes it more difficult to obtain aim. One can aim most correctly at large bodies of troops which offer a definite shape, and if these are in motion, it will be easier to take aim at them if they are marching in even time, in a direction that can be ascertained beforehand.

12.

By throwing him off his guard and division of the enemy's attention we render it more difficult for him to take aim.

The more frequently troops appear from different directions, at different distances, and in

different formations, the more difficult it will be found to bring them all under fire. This does not mean, however, that one should lead more troops into fire than is necessary.

13.

It is more difficult for an enemy to aim when he is seized with terror, or the loss inflicted on him is great. Therefore, where it is possible, troops advancing should be supported by the fire of stationary bodies.

14.

I advert now to details.

(*a*) It is a matter of importance in what formation even small spaces swept by fire are passed. An elevation in the ground between two depressions must be passed with as broad a front as possible; because, otherwise the head of the troops draws the enemy's attention, and he has time to direct his fire upon the column.

(*b*) The course of a very curved shot carries it up above cover. At long distances, when the course of the shot is curved to the greatest degree, cover which betrays one's presence to the enemy is of little value. In a situation of this kind it is all the more important to keep in motion,

changing suddenly both in time and direction, for motion increases materially the difficulty of estimating the distance and aiming.

(*c*) Occasionally barricades of trees (abattis) have been made use of for immediate protection. There can hardly be a worse cover. In order to fire over the abattis a man must stand up, thus exposing himself, while the abattis clearly marks out for the fire of the enemy's artillery and infantry the position taken up. A man would be better protected while lying flat upon the ground without any cover whatever.

(*d*) The lengthening out of one's firing line by means of loose touch, and intervals, perhaps brings the wings out of the shot-sphere, and sometimes makes it possible to bring a converging fire. Supports should move behind the wings of the firing line in loose order, even in extended order if necessary, and stooping down. They may remain behind at far greater distances than is usual in peace, and can also remain with the firing line, supposing they find cover there. As long as cover offers itself it can be taken advantage of during an advance, for a longer or shorter time, according to the danger of delay. When the cover ends, the firing line should move forward in parts—perhaps first one

wing then the other, then the centre; running with sudden change in time and direction. (It can do no harm also to drop at the flashes of the enemy's shot.) As soon as one portion draws fire upon itself it should drop; another seizes the moment to advance. The supports should only take part in the fight when necessary; they should run into any cover near at hand, if the direction of the enemy's fire admit of it. If the first line be driven back they should not stick always to the old rule of receiving it stationary. It may often be of advantage for them to run forward to meet it, and check further retreat, or hurry through it and throw themselves upon the pursuing enemy.

(*e*) We have a position in our Musketry Instruction which makes a volley, lying down, and without any support to the rifle, possible. To say the least of it, it has proved its efficacy on the rifle range.

(*f*) The bottoms of defiles are, as a rule, heavily swept by fire; the sides or slopes much less heavily. The latter must be taken advantage of in moving forward, by the command, "Out from the right, or left, flank—march!" At any given moment the men must be able to form up rapidly inwards or outwards, and in close or scattered formation.

(*g*) If it is necessary to throw a close body of men upon the enemy, the troops may be brought up in scattered order, and a converging onset will close them together again. One ought, above all things, to discriminate between the formations for cover and fighting, and not, as so often happens, discard the former, if men get for a moment out of fighting order. Troops should be so instructed, that they can quickly change into every necessary formation, and then they will always be ready for fighting.

15.

Let us now put shortly together what we have wished to say.

It is indispensable to weaken by every means which tends to do so, the murderous effect of the weapons of the present day. Who ever best understands this is sure of victory.

Projectiles must not be considered only in relation to their mark. They sweep and command the battle field. There are certain portions in the shot-sphere, varying in situation and with time, where the shot fall more and less thickly; and we can partly gather from general rules and partly observe those where they fall least thickly.

Therefore, apart from the question of increasing the difficulty of aiming, there are means even

in the open plain of lessening the effect of the enemy's fire.

These means consist in the attitude of the men, the formation of the troops, the selection of positions to remain in, of directions and manner of advancing, and they vary with circumstances. Leaders should be practised in recognizing the most appropriate means, and troops be able to apply them rapidly.

Signals visible to the eye are, for attentive troops, the quickest way of conveying orders; the execution of which takes the least time, when it is entrusted to the initiative of individuals without any interference.

The art of taking advantage of cover is an old and much practised one, but it must be elevated to the very highest point of perfection. It is important to comprehend that even descriptions of ground which offer no useful positions or bases for attack may yet afford cover as well as others, and further, that the position of individual men, the formation of troops, and the manner of posting and moving them, must conform to the nature of the covering ground; while the intention of forming instanter into fighting order, at the directed moment, is preserved.

That this is no easy problem is a matter of course, but it matters not whether a problem is easy or difficult, but sufficient that it must be solved; and the difficult problem has this

advantage, that in seeking to solve it the faculties are strengthened.

The surest way of introducing new ideas and new systems into the Army, is the establishment of special schools. The greatest and most important part of the art of fighting, for the infantry of the present day, is the art of operating under fire without exposure to destruction. This art exists, and can be further cultivated and taught. To this end we require a school which would be most properly called the *Tirailleur School*, and which might become for the army in its own sphere what the school of musketry has become with regard to the cultivation of shooting, and gymnasiums with regard to gymnastics.

16.

It is evident that the method of conducting war as a whole, can be made to contribute substantially towards lessening the losses of troops. For example, there should be sparing resort to demonstrations, to fighting while reconnoitring, and to false engagements.

Great aims—the consciousness of which stirs up both leader and troops; and to succeed in which it would appear worth while to risk everything.

Clear plans—No fight should be begun without a knowledge of its object.

Nothing should be surrendered that must be

kept possession of; nothing taken that cannot be maintained; everything won, clung to with might and main. The fight which fluctuates is the most bloody one!

Successive lines of defence should be avoided, one line should be occupied, but that the best, and that held.

No more men should be sent under fire than is necessary, but yet a sufficient number.

Sacrifices should be made at the right moment.

The execution of a movement should not be hurried when there is time, for haste costs blood, where delay often gives gratis.

That which must fall of itself should not be fought for, nor that which time or skill can procure claimed by force.

Above all things orders should be distinctly given, so that subordinates may know whether they may manœuvre or must take the bull by the horns.

In extending or supporting a fight the artillery should be employed; and victory should be turned to profit by the use of cavalry and artillery, and so on.

We see, though, that all these matters belong to another province from the art of which we have been speaking, and which does not deal with when and where troops should be sent under fire, but with how they should conduct themselves when there, in order to suffer as little loss as possible.

W. Mitchell & Co., Printers, 39, Charing Cross.

Authorised Translation.

ON THE

EMPLOYMENT

OF

FIELD ARTILLERY

IN COMBINATION WITH THE OTHER ARMS,

BY

KRAFT, PRINCE OF HOHENLOHE-INGELFINGEN;

MAJOR-GENERAL, COMMANDANT OF THE BRIGADE OF ARTILLERY
OF THE PRUSSIAN GUARD.

TRANSLATED FROM THE GERMAN,

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1872.

TRANSLATOR'S PREFACE.

THE marked improvement in the efficiency of the Prussian Field Artillery since the year 1866, due in a great measure to a more correct recognition of its just employment in the field, has been so conspicuous in the recent campaign, that the Translator has deemed the reflections of one, who has contributed in no small degree to the progressive changes effected in this branch of the service during the interval, worthy of a wider circulation in this country.

ON THE EMPLOYMENT OF FIELD ARTILLERY

IN COMBINATION WITH THE OTHER ARMS.

MOTTO:—Im Kriege ist alles einfach, aber das Einfache ist schwer. *Clausewitz.*

An essential change in the conduct of war has been brought about by the introduction of rifled fire-arms. This applies both to Infantry and Artillery, since both arms are respectively equipped with rifled fire-arms and rifled cannon, and lastly it applies to Cavalry, which arm however merely plays a passive part in respect to these changes, inasmuch as it must of necessity suffer from the improvements effected in the other arms. The principles of its employment must consequently be modified.

The relations subsisting between the artillery and the other arms, and more particularly with reference to the Infantry, might be almost considered to have undergone no change, for since the improvements in both cases refer chiefly to extension of range and greater precision of fire, it would seem that the mutual relation of the two arms must have remained the same. But this is not entirely the case. Though the main principles of all three arms must ever

remain the same, as our great writer *Clausewitz* has irrefutably established, yet the improvements of modern times have introduced changes of the situation during the course of the battle and in its conduct, about which it is well to have clear notions in time of peace, that they may not take us by surprise in time of war.

From these changes of the situation during the course of a battle, proceed the fundamental principles for the employment of Artillery in combination with the other arms, and this is the subject which we shall now examine.

We would first premise that it is not our intention to theorise generally, nor to take in the employment of all the possible systems. Neither do we wish to criticise existing regulations and constructions. All that would be of little real use, and would carry us too far. We shall merely take the concrete circumstances as they exist in the Prussian army, and apply what we have and as we have it. Again we do not wish to enter into abstruse Artillery deductions, but only to agitate specific Artillery questions so far as is absolutely necessary for elucidating the special subject we have in view, namely, the employment of Field Artillery in combination with the other arms; and in special Artillery matters, we shall entirely omit what is not absolutely essential to our design.

As a starting point for our reflections, we must first glance at the sphere of effect of the three arms, as exhibited by the present armament.

I.—NATURE AND EFFECTIVE RANGE OF THE THREE ARMS.

Infantry has at all times been the principal arm and has become still more so owing to the improvements in fire-arms. It may be asserted without any exaggeration that the efficiency of our Infantry *cannot be ignored when at at a distance of even* 800 *paces,* and that as a general rule it increases as the distance becomes less; that *at* 300 *paces* it becomes *decisive;* and that the effect of Infantry *at* 100 *paces* may be called *annihilating.* The foregoing

assertions are true in the case of an intact, well-instructed unshaken infantry, such as the Prussian Infantry when it takes the field.

From the extension of its sphere of effect proceeds that high degree of *self-dependence*, which our Infantry has now attained, for it can no longer be ridden down by Cavalry, unless it be previously shaken, demoralised, or in some way surprised, and as long as Infantry preserves its sangfroid, Artillery can no longer approach to case shot range, unless indeed it wishes to expose itself to a speedy and total annihilation. In the present day a skirmisher section of good Infantry will produce more effect than a whole battery, at the distance at which the case fire of Artillery has hitherto carried destruction.

The sphere of effect of Infantry fire having extended to 800 paces, the positions and cover requisite for its application can be found with greater ease. There are few plains in Europe where at intervals of 800 paces we do not come across some such cover as hollow roads, gardens, hedges, ditches and the like, which offer to ably led lines of riflemen, opportunities for using them either as a screen against Artillery fire, or as a support against a Cavalry attack.

On the other hand, it must be borne in mind that *every body of demoralised Infantry* offers precisely the same opportunities *to the enemy's cavalry* as of yore, and that the best Infantry in the world may, under certain circumstances, *become demoralised for a shorter or longer time*, as for instance: after a protracted struggle against a numerically superior Infantry, after holding out for a long time under Artillery fire, or owing to great fatigue induced by marching, fighting, and hunger, when such fatigue amounts to absolute exhaustion of the strength or owing to loss of the leaders in battle, and lastly owing to surprise. Under such circumstances any Infantry would succumb to Cavalry with ease and almost without resistance.

Further, it must be borne in mind, that in great decisive struggles, those small detachments of Infantry, which utilise the ground in the aforesaid manner, require to be supported and fed by masses of Infantry, which must follow them at no very great distance, and this

distance does not depend on the range of the rifle but on the speed of the legs, which is subject to no change.

But these masses cannot always be so employed without being exposed to the enemy's Artillery, if the latter also keeps at a distance beyond the effective range of our skirmishers. Hence it follows that although Infantry individually has acquired a certain degree of self-dependence, this self-dependence *does not increase in proportion as the body of Infantry* increases, and that therefore a larger mass of Infantry, made up of many battalions without the support of Cavalry and Artillery, loses its self-dependence before an enemy who has all three arms at his disposal.

Cavalry has apparently lost most by the improvements in fire-arms. This is, however, only apparently the case. The bravest Cavalry can of course do nothing against unbroken Infantry, of which the Campaign of 1866 has given us further proof, and it would be a grave error to expose Cavalry to the destructive fire of well-posted Artillery. But when the fight has lasted some time, when the contending Artilleries have half reduced one another to silence, when the destructive struggles of the Infantry at close quarters have loosened the formation, when the masses are deprived of their leaders, and when the well-ordered companies and battalions have given place to swarms of isolated foot-soldiers, then has the moment come for Cavalry, precisely as in the days of Rossbach and Hohenfriedberg to reap similar successes, for *the enemy's Infantry*, surprised, shaken, dispersed, and engaged with our Infantry, *would be irretrievably swept away by a rapid charge of Cavalry.* Now the enemy's Artillery occupied with our Artillery and Infantry, and with its own damages, can *be so surprised in the open field that the attacking Cavalry hardly receives a shot.* This efficiency of the Cavalry becomes heightened from the mere circumstance that the Infantry are firing at one another at greater distances, and it consequently becomes much more difficult for the latter with any expectation of success to change from a favourable rifle fire to a decisive bayonet attack. Hence it has been said sometimes, and

not entirely without reason, that for the future, *Cavalry must be the bayonet of the Infantry.*

To carry out this object, it is however necessary sometimes, though only for a short time, to bring the Cavalry under fire where it is intended to make a decisive attack with the Infantry.

The instructive Division Exercises last summer have shown us how this may be done, and it is some consolation for the Cavalry to know, that although the improvements in fire-arms have detracted from its independence in the same degree that the self-dependence of the Infantry has been thereby increased, the fields for its usefulness are still not less numerous than of old, but on the contrary are rather more extended.

Artillery has extended its sphere of effectiveness in the same degree as Infantry. Just as Infantry in the olden time fired at a distance of 300 paces at the most, and now hits at over 800 paces, so Artillery had formerly no effect beyond 1800 paces at the outside, and now it can range to more than 5000 paces. The precision of Artillery fire has improved to the same extent as that of the Infantry. We will examine more closely this subject presently. On the other hand the effectiveness of Artillery *at close distances has not improved*, that is to say, at those distances at which formerly every round shot hit the mark and to which the most effective case shot ranged, Artillery could not be improved, and consequently it is overmatched by the Infantry which just at these distances has progressed. We shall revert to this also presently.

Firstly as regards the range. We must enter rather more deeply into the science of Artillery, to provide against many exaggerated opinions concerning the precision of our fire, which pass current out of the Artillery world, errors of which Artillerymen themselves are not innocent, because proud of their arm they are prone to ascribe higher qualities to it than it really possesses.

Such erroneous opinions, however, are exceedingly dangerous, for in serious cases the commanders and the other arms, misled by these exaggerations, might readily form expectations of the Artillery and make demands

on it, which it is not able to fulfil, and the non-fulfilment of which at the critical moment might excite discontent, if not actual discouragement, among the other arms.

We have already mentioned that Artillery can fire at distances over 5,000 paces. That sounds very formidable but it is not so bad as it seems if we consider the subject closely.

Our practice tables show that when firing shell at 5,000 paces, the 6-pr. has a spread longitudinally of 200 paces and laterally of 36 paces; that is to say, if we shoot with the 6-pr. at 5,000 paces, knowing the range precisely, having a clear view of the target and not making the slightest mistake in the service of the gun, we must not be surprised if a shot is 100 paces short or 100 paces beyond, or 18 paces to the right or 18 paces to the left of the target. We could not desire greater excellence in the gun. Further, the angle of incidence of the shell at 5,000 paces amounts to 22°, consequently as a rule it will remain embedded, and when the shell explodes on striking, its fragments will penetrate into the ground, so that no great effect can be expected from the bursting. (The 4-pr., according to the practice-tables shoots about 25 p.c. worse, that is to say, at 5,000 paces its projectiles have a longitudinal spread of 250 paces, and a lateral spread of 45 paces. According to the actual practical results of the shooting at practice, the 4-pr. shoots about as well as the 6-pr.) If it be moreover taken into consideration that in war, the distance in the majority of cases is unknown, that if the enemy at 5,000 paces is on an elevated position it becomes very difficult to judge the shots which fail to hit, that even if we can see them an estimation cannot always be made, so as to apply the amount of correction necessary; that moreover a deviation of 200 paces is allowable, and if it also be remembered that the weather is seldom so clear that we can discriminate at 5,000 paces, thence it follows and it may be accepted as a rule, that a cannonade at 5,000 paces is mere waste of ammunition. It may be considered a precept *that we can shoot at* 5,000 *paces and more, but hitting is out of the question.*

Let us consider the effect of the 6-pr., at 2,500 paces. Our tables show a spread longitudinally of about 120 paces and laterally of 13 paces, but it must be observed that half of the hits fall on a space 32 paces long, and 3½ paces broad. The angle of incidence amounts to 7½°. The distance, 2,500 paces, is therefore such that when we have got the range, we can, for instance, hit a battalion in mass with half our shots. The angle of incidence is small and the fragments range to a distance. The effect on a mass of Infantry at a distance of 2,500 *paces may be termed murderous,* if the Infantry remain in position, and we see them well and can observe the shooting.

At 2,000 paces, according to the same tables, half the shots fall on a parallelogram, 27 paces long and 2½ paces wide. This is the space covered by a gun and its team, and we may therefore say, *that from* 2,000 *paces downwards, the distance commences at which a fire of guns against guns can be carried on with a prospect of success.* The nearer we approach the enemy, the more satisfactory the effect, and as we see from the same tables, half the hits at 1,000 paces are concentrated on a space of 18 paces long and 1 pace wide and the angle of incidence being only 2½°, we may assert that a fight carried on between *two Artilleries at* 1,000 *paces must in a short time end with the annihilation of one or other of them.*

While our practice tables give us something to go upon as regards the effect, and therefore for the application of Artillery, we must not omit to take into consideration certain weak points which are essentially prejudicial to the efficiency of the Artillery, or otherwise we might become victims to our own illusions.

(1.) Firstly, it is pre-supposed from these results that the *aim is correctly taken.* If the aiming is bad the shooting will be bad, and when no aim is taken nothing will be hit.

This sounds very simple but it is nevertheless frequently disregarded. For good shooting, it is necessary that the tangent scale should be properly understood, well adjusted, and that the gun should be well laid. In addition to this, the gunner who lays must

be perfectly calm, and this coolness becomes injuriously affected if the enemy's bullets are whistling about, and still more so if he is rendered unsteady by his superiors. It occurs most frequently if he is hurried on to a quick delivery of a shot.

(2.) The next important points are a *correct estimation of distance, the possibility of seeing where the first shot strikes,* and the *correction of the laying after the observation has been made, and lastly, the possibility of seeing the enemy well, so that we can aim at him.*

All these circumstances prejudice the effect to such a degree, that in the case of a very short range, our Artillery has no effect at all instead of an annihilating effect. These disturbing influences are far more serious with rifled guns than was the case formerly with smooth-bores, for the latter shot just as badly if badly laid, but sometimes hit the mark although apparently badly laid. We cannot count upon that with rifled guns. A hurried, ill-directed shot from a rifled gun performs just as much as no shot at all, and consequently it is worse than if we had not shot at all. Last year several brigades carried out competition shooting, at which one of the batteries laid and fired each gun as quickly as possible, the other battery, on its flank, delivered a carefully-considered and well-aimed fire, as laid down in the regulations. The effect of the two batteries in the same time was about equal, and, in part, was slightly to the disadvantage of the one firing rapidly. On the other hand, the expenditure of ammunition in the case of the guns fired for rapidity, was about three times as great. Here, in peace-time, this case of rapid firing at a target turned out to be a perfect waste of ammunition. It can hardly be calculated how much more this comparison would have increased to the disadvantage of the rapid fire, had the enemy's battery occupied the place of the target.

(3.) Lastly, the most essential consideration which prejudices the efficiency of our rifled guns, is *the difficulty of firing at a moving object.* Every sportsman knows how difficult it is to shoot at running game with a rifle, and yet in his case he can follow the move-

ments of the quarry with his rifle. It will be evident to everybody how much more difficult it becomes to fire at a moving object with a machine which remains fixed, and is compounded of the following: adjusting the elevation, aiming, firing, ordering the range, understanding and obeying the order, estimating the distance observing the effect, correcting, determining the objects situated on the enemy's front, understanding and grasping these objects, ordering the fire at the right time, and so on; which machine we call a battery.

Thence it results that the effect of rifled guns at moving objects does not lose so much per cent., but as a general rule, prevails or becomes *nil*, according as the battery fires with *sang froid*, or is rendered unsteady. Still more, however, in the case of firing against moving objects, does the fact assert itself that *an over-hasty fire has no practical effect.*

We have still to speak of *case-fire.*

Case-fire, from rifled guns, ranges to a rather less distance than that from the old smooth-bore guns. At close distances, under 300 paces, it is about as effective.

We have already mentioned that a well-aimed Infantry fire is more effective than the case-fire of Artillery, and that consequently we can no longer approach to within case distance of unbroken Infantry, unless the battery is intended to court almost certain destruction.

Case-fire, consequently, is chiefly used by the defender against the assailant at close quarters, when the object is to hold a position at any price, and should only be employed in the attack, if the hostile Infantry is shaken, demoralized, badly armed, or generally speaking is in that condition in which its full power cannot be looked for.

From the preceding there result the following, as limits of distance:

A decisive struggle *of Artillery against Artillery can only be reckoned upon at a distance of under* 2,000 *paces.*

If the firing is maintained against Artillery at a further distance than 2,500 *paces, it is only a cannonade for the purposes of delay.* If this is not the in-

tention, an error is committed. It may be then that the object is to draw off the enemy's fire from the other troops, and that a nearer position is forbidden by the groun'.

Against other troops Artillery *is very efficient from* 800 *up to* 3,000 *paces,* and *according to the size of the masses* at even greater distances. We ought *never to approach within* 800 *paces of unbroken Infantry, if it can possibly be avoided.*

Against a *shaken enemy,* and when *on the defensive in combination with the other arms, Artillery must not shirk even the closest quarters.*

Artillery-fire at 4 and 5,000 paces and beyond is a *waste of ammunition,* and is only permissible when it is merely the object to *make a noise (e.g.* to signal), *to disturb villages,* &c. If the enemy is guilty of such a waste of ammunition, *then should the antagonist rejoice,* but *avoid imitating it.* (It requires some strength of character to allow yourself to be quietly fired upon. Schaafberg at Skalitz, Gradlitz).

We have already alluded to the difference between the 4-pr. and 6-pr., but have not as yet mentioned that the 4-pr. fires an 8½-lb. shell, the 6-pr. a 14-lb. shell, the latter having a more damaging bursting effect. If we add that the 4-pr. is considerably lighter than the 6-pr., that both guns are drawn by 6 horses, therefore the 6-pr. is more cumbersome than the 4-pr., that moreover the 4-pr. is equipped with 48 rounds, the 6-pr. with 30 rounds, then the conclusions for the employment of the two calibres follow of themselves. The Field-division which is attached to a Division,* consists half of 4-pr. and half of 6-pr. bat-

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* A North German Army Corps, consists of 2 Divisions of Infantry, of 2 Brigades each—1 Division of Cavalry, of 2 Brigades and a Regiment of Field Artillery.

The Regiment of Field Artillery consists of 3 Field-Divisions, each of 2-4-pr. and 2-6-pr. Batteries, and 1 Horse-Division, of 3-4-pr., Batteries.

The Regiment is commanded by a Field Officer, with an Adjutant (or Staff Officer), and each Field-Division and Horse-division is also commanded by a Field Officer, with an Adjutant.

Note.—A Division of Infantry is spelt with a capital initial letter in order to distinguish it from a Division of Artillery.—TR.

teries, *one of the 4-pr. batteries* is told off *to the advanced guard*, and there still remains one for relief if the other should be knocked up. *The 6-pr. batteries will have to bear the brunt of the Artillery combat.* Horse Artillery, as is well known, is naturally armed with the lightest calibres.

From these considerations of the effect of the different arms proceed the conclusions for the employment of Artillery in combination with the other arms.

II.—GENERAL DEDUCTIONS FOR THE EMPLOYMENT OF ARTILLERY.

The general rôle of Artillery, as laid down by military writers for more than a century, has undergone no change from the introduction of rifled arms. The duties it includes are as follows:—

(1.) To commence the action.
(2.) To carry on a delaying action.
(3.) To prepare the issue (the attack) by firing at short ranges.
(4.) To extricate the other troops from the enemy's Artillery fire.
(5.) To co-operate in pursuit, even, often to follow up single-handed with its fire, if the other troops cannot do so on account of the natural obstacles of the ground.
(6.) To protect the other troops in retreat.

But if Artillery is to fulfil its duties, and always to carry them into effect at the right moment it is urgently necessary that it be at hand when required; and that it be worked in intimate relation with the other arms. For this purpose, it is also urgently necessary that the *object* should *be pointed out to it* by the Commander of the Troops. For instance:—if the Artillery is to carry on a delaying fight (2) alone, that is to say, without any specially defined objective; in such a case, provided it is protected from contingencies, it falls in with the *object* of itself. If the object is *to free its own troops from the fire of the enemy's Artillery* (4), it can also enter into the fight independently, and then it will hear and

see for itself whence the enemy is firing. But if the Artillery *is to commence the action* (1), then must the commander, who wishes to commence, *give it orders. If it is to prepare an attack, a decisive action, with its fire* (3), the commander of the troops must specify *where he will attack,* and *when he will bring about the issue.* If the Artillery is to co-operate in pursuit (5), it *must receive the order that a pursuit is to be made, and in such-and-such a direction.* If it is to protect the other troops in their retreat (6), it *must receive orders in what direction the retreat is to be made,* and *in what positions the troops expect to find this protection.*

All this sounds very simple but it is nevertheless very difficult to carry out. For the commander of a body of troops, at the moment when he moves to the attack, or is attacked, has all at once an immense amount to do and to think of. He has to send orders and staff officers in a great many directions and if, therefore *a close connection between the Artillery and the other arms is not established by the regular organization of the command,* in such a manner that the foregoing somehow naturally takes place, then mistakes will always arise, which prevent the Artillery from carrying out the specified object, either in its full extent or at the right time.

The close connection of the Artillery with the other arms can consequently solely be established by the commander of a mixed force keeping the commander of the Artillery at his elbow, as long as his troops are not under fire, as by this means *the latter learns the intentions of the commander and his resolutions at the moment they are formed,* and can, in furtherance of them, send his orders to the batteries; only need he keep with his batteries in the event of the whole or the greater part of the batteries being in action so that, being acquainted with the ideas of the commander, he may select the object to be fired at and supervise the correction, estimation, rapidity of fire, reserve ammunition, and so forth.

But as soon as the Artillery fire has to cease for any particular reason, he must again betake himself to the Commander of the Troops, so as to be in a position to work in conformity with his ideas (unless

something of critical importance should occur in his Batteries demanding his presence in person.)

The distinct Order still exists in the Artillery, that the Commander of the Artillery should repair to the commander of the troops to which he is attached. If he happens to be the commander of a battery, he is placed in the most unpleasant position, for he must leave his battery, for the interior economy of which he is answerable, during all the marches and movements and, perhaps, not be with it at the decisive moment when his reputation depends on its behaviour. Neither has he an orderly officer to send with an order to his battery, and the one trumpeter is soon tired out and can do nothing more.

It is otherwise with the division-commander. He has a division staff, consisting of an orderly officer, a trumpeter and orderlies; and during his absence the battery-commanders can look after the interior economy on the march.

On this account it is well that Artillery should not be distributed to other troops in smaller masses than divisions, to the division. The Division Commander then rides with the Commander of the Division, and with him hears and sees everything which affects the Division. He can then send to his batteries, for which he selects positions, orders, either dictated by the Division Commander, or independently, being acquainted with his views.

He who has not experienced war, will be readily disposed to estimate such considerations with regard to the ease of transmitting orders as pedantic and of little import; but they are of the very first importance, *for of what avail are the best and most skilful orders if they never arrive.*

In view to the communication of orders we are therefore of opinion that the Artillery should be attached to the Division by divisions, and *as a principle should never be attached to brigades by batteries.*.

Let us suppose the case of the commander of an Infantry brigade, the battery belonging to which is in action at 2,000 paces. During the cannonade the commander advances with his brigade to the attack, overpowers the enemy in a close fight after a strong

resistance, and now wishes to direct this battery on some particular object. He has a single staff officer. Let us suppose that neither the brigade commander nor his horse, nor the staff-officer nor his horse, are wounded (which can only be attributed to great luck), still their horses will at any rate be dreadfully tired. How long will the staff officer be in riding to the battery a quarter of a mile—(German)—in rear? and what time will elapse before he can rejoin his brigade again? The brigade commander may, perhaps, wait for his battery once, but he will not do so again. On a future occasion he would rather leave the battery without orders than expose himself to the reproach of having waited too long, and of not following up with energy, and so allowing the enemy time to reform.

Therefore in a division where it is the business of the commander to anticipate orders it will be more easy for the Artillery to work hand in hand with the other arms in the fight.

For other reasons also it is better that the Artillery should not fight by single batteries. We have already spoken of the material difficulties which beset the observation and correction of the shot, the determination of the range, and the hitting of the mark; and it is obvious of itself that, the smaller the number of guns, the longer will it take to find the range, while if we fire round after round to try the different distances, each time with a fresh gun already loaded, we can arrive much more quickly at a satisfactory result. Lastly, it is a saving of time and ammunition if one battery can communicate to the other what information it has obtained. Therefore, *for reasons affecting the conduct of the cannonade, it is important to attach to the other troops, several batteries in combined command,* and to avoid the dispersion of single batteries to the several brigades.

Moreover, every improvement in fire-arms points to the necessity of concentrating as effective a fire as possible *on the decisive point of the battle field;* and therefore to a *distribution of the Artillery in greater masses than by batteries.* It ought not to be believed that it is easier for batteries to concentrate their fire on a common point if

distributed to the several brigades, and from different points of the *terrain*. First of all, the importance of the decisive point cannot always be perceived from every position, and then it will be a waste of time and, from the tired state of the orderly officer's horse, almost impossible to send orders as to the direction of the fire to the various batteries of brigades, posted on widely separated points of the ground. Obstacles of ground sometimes make it quite impossible.

We see, therefore, that all the other reasons, besides that of ease of communicating orders, point to a keeping together *of the Artillery of the Division* by divisions; and against *a dissemination* of the batteries among the brigades.

We must not, however, neglect to mention the exceptions which must evidently be made to this fundamental rule.

A Division operating independently will naturally *attach a battery to the advanced guard*. The commander of the advanced guard will also receive Cavalry, and in that arm he can find, in the shape of orderlies or orderly officers, more means of communicating orders than the commander of an infantry brigade.

In the same way, the commander of *the advanced guard of an Army Corps*, which has an entire or a reduced Division-Artillery, will attach a battery to *his advance;* for this *advance* bears the same relation to the whole advanced guard, as the advanced guard of a Division operating independently, to the Division.

Again, if a brigade is ordered on an *independent detached duty*, and has to operate without support, the attaching of a single battery cannot be avoided. Lastly, when a *Cavalry Brigade*, either forms the Reserve Cavalry of a corps, or is sent away to the front or to the rear, on an independent duty, then a single Horse Artillery Battery must be attached to it.

The opinion we have expressed in favor of the employment of Artillery in masses, and of the avoidance as a principle of its dispersion in single batteries, applies with still greater force to its employment by single sections (2 guns) and single guns. The only exception in which the employment of a single section appears permissible, is when local objects have to be attained, *e. g.* the

destruction of a barricade; a reconnoissance with a small detachment for the purpose of harassing the enemy; and such like. Such detachments of single sections must be restricted to a minimum of time, and must return on completion of the object for which they are detached. Reasons connected with discipline, organization, maintenance, &c. in these cases are so numerous and evident, that we have not considered it necessary to enumerate them.

The employment of a gun singly is always a fault.

III.—THE COURSE OF THE FIGHT.

In order to obtain a real basis for the rules which we wish to arrive at for the employment of Artillery in combination with the other arms, we must first consider the fight with the forms it usually assumes, and thence deduce the requirements on which the rules are to be based. *For as we make the rules and train the troops in time of peace, and then put them to the test of war,* it is obvious that *the rules should be arrived at by reasoning based on the requirements of war.*

There are four forms which the fight may assume:

1. The offensive combat.
2. The defensive combat.
3. The pursuit.
4. The retreat.

In the last (4), that case only will be considered where time still permits of our resolving upon a retreat of our own free will.

In addition to the above there are two other varieties of combat viz.: The *rencontre* combat and the forced retreat.

There are no rules for either of the last cases, for in the *rencontre,* the character of the offensive and defensive will so often change, owing to circumstances not to be calculated on beforehand, that the rules also cannot be arranged beforehand. To lay down rules in a forced retreat would be as unprofitable a task as rules for a slate layer when he tumbles off a steeple.

(1). *In the offensive* the change from the march to

the combat, and the combat itself, take place in much the following manner.

The advanced parties fall in with the enemy; the foremost Infantry or Cavalry engages with him; and if he makes a stand with all three arms in an evidently favourable position, it betokens that he will accept battle on the defensive.

The first "call" of the commander of the advanced guard of a Division is for the Artillery, which has to seek out a position not far from the advanced parties, and to engage with the enemy. The latter, meantime, by a further show of force has given us to understand that a serious resistance is intended. The Artillery fire must subsequently draw the enemy's fire on itself, and during this cannonade, the commander of the advanced guard resolves how and where he must form his troops for attack.

If he expects success from his attack, he informs the Artillery commander of his resolution, and of the object, upon which the latter moves forward his guns and brings on an engagement at a closer and more decisive range, with the object of silencing the enemy's Artillery as soon as possible, and shattering any other hostile troops which may be visible.

Should the enemy, either before or during the skirmish of the advanced guard, be found too strong to be encountered by it alone, the commander of the Division is informed of the fact. He hastens up, meantime, and under cover of the advanced guard skirmish, forms his plan. He at once sees the necessity of strengthening the Artillery of his advanced guard in order to detain the more powerful enemy in action, until the Infantry of the division has come up, and has formed up for attack in the intended manner.

The speedy strengthening of the Artillery of the advanced guard becomes still more necessary if the other troops composing it should happen to be seriously engaged before it is known if the enemy intends to accept a decisive battle in the position; the question then is this, whether more Artillery power will make it practicable for the engaged Infantry of the advanced guard to leave off provisionally, without

suffering a serious check from the enemy, and await the arrival of larger bodies of Infantry. When the latter come up and are ready to attack, then the whole of the Artillery of the Division, in the same manner as has been related of that of the advanced guard, should move forward for a more decisive struggle at closer quarters, against that part of the enemy's position which has been previously selected for a decisive attack.

If it is the question of the fight of an entire Army Corps, the course is, for the most part, precisely the same with the single modification that the advanced guard has its *advance* provided with Artillery, which stands to it in the same relation as an advanced guard, whilst the latter plays the same part to the Army Corps as the advance to it. A difference will, however, be observed in this respect; the Reserve Artillery, in conjunction with the Artillery of the advanced guard already in action, is employed as a screen to conceal the advance of the main body of the Corps, and the preparation of [illegible] based.... The Division Artillery of the main body cannot however, separate itself from the main body, but must confine itself to supporting it in attaining the decisive attack. [illegible] to supporting it in attaining the local objects of the fight (e.g. covering of the other wing, and the situation of &c.) If the form of the ground [illegible] w must be struck the fight are such that the chief bl[illegible]re the advanced in quite a different direction to wh[illegible] the advanced guard is engaged, then the Artillery [illegible] latter in the guard will be charged with supporting th[illegible]rve Artillery local objects of the fight, while the Rese[illegible] body to will unite with the Artillery of the mai[illegible] prepare the principal blow.

When the troops are formed up in readines[illegible]s to advance, the Artillery attack is resumed from a clo[illegible]y is decisive position, and is carried on until the ene[illegible]ion considered to be sufficiently shattered that the pos[illegible]he which he occupies may be assaulted; a part of proceedings which, with few exceptions, forms th[illegible] chief rôle of the Infantry.

When our Infantry draws near to the enemy, our Artillery may become partly or perhaps entirely masked by our own troops, and then comes a risk in firing over the head of one's own troops. But as our

Artillery has already got the range, and from personal observation knows the points of the ground in the enemy's front which are endangered by it, may under certain circumstances fire away even over the heads of its own Infantry, until the latter approach the endangered region. Our Infantry is then so close to the enemy that, according to the opinion we have already expressed, it is capable of more effect than Artillery, and by its powerful fire, the decisive result will be so quickly brought about that our Artillery, even if it wished to limber up and advance, would arrive too late to co-operate.

At this juncture, the Artillery must cease its fire against the different points as they become masked by our troops, and it should now be directed upon any of the enemy's guns which may still be effective or upon any reserves in sight, &c., or possibly the batteries may have to remain in position, loaded, and ready to open a vigorous fire against any flank attack on the part of the defender, or in the event of the attack being successful, to hasten up as quickly as possible, to the occupation of the captured position, or in the case of the attack failing, to check the enemy's pursuit by an effective well-aimed fire.

In the course of such an attack, the Artillery will, as a rule, occupy at first a position on a wing of the previously engaged troops. As at the beginning it is on its part only protected on the flank on which the engaged troops are fighting, it therefore becomes necessary to protect the other flank of the battery against any contingencies (this is usually done at first with Cavalry), until, by the advance of the whole body of fighting troops, and the general course of the fight, both flanks of the Artillery position become protected. This applies both to the *advance* of the advanced guard, and the advanced guard itself, and to the entire Army Corps.

In the event of the exceptional case happening that the ground suited for the attack of the Infantry lies on one flank of the Artillery position, it becomes necessary to protect this position by a special detachment on the other flank.

(2). *Pursuits.* If the attack is successful and the prominent points are occupied by Infantry, the possession of the position is not deemed secure as a rule, until our own Artillery has established itself on it. The latter will therefore occupy as quickly and as strongly as possible the captured positions, in order to allow a halt to our Infantry, who have become separated in the fight; to loosen the order of the enemy's retreat by its fire; and to facilitate the work for the Cavalry, which is accompanied by Horse Artillery in order by its fire to nip in the bud any fresh attempt at resistance. If the enemy makes a fresh halt in a new position, this new position must be attacked afresh and another offensive fight unfolds itself before us. At length an obstacle of the ground, perhaps a river, causes a check to the pursuit by the other troops, then as many batteries as are at hand are called for to keep the enemy as long as possible on the trot. Here the shooting may and should be carried on up to a distance of half a mile (German).

(3.) *Defensive Fights* are, as a rule, with regard to their design, and to the employment of Artillery, far easier than offensive fights; although, in *the practical carrying out they are infinitely more difficult.* As the position has been selected beforehand, so also each battery, in first line, has had its position assigned to it, some of the batteries only being reserved for the purpose of taking up positions where they are the least expected. The Artillery fires from its prepared position at the enemy wherever he comes within range, in doing which, however, it should exhibit its whole force as late as possible, not fire at too long ranges, but, if possible, annihilate the hostile Artillery coming within its range before they can bring up an equality of guns, and smash the other hostile troops at distances previously measured out.

Lastly, we must say a few words concerning a prejudice which may easily arise. If it once has been resolved to defend a position, the Artillery must hold this position, even if the enemy has approached to within rifle range; and it must combine its case fire with that of its own Infantry, in order to establish the ascendancy, and

must not think of a retreat, or of its own safety, until the order for the retreat has arrived, unless, of course, it be previously silenced.

(4.) *Retreat-Fighting.* The situation of affairs may force us to resolve on a retreat. This, as a general rule, either takes place after the enemy's attack has been successfully repulsed, or after we have compelled the enemy to form up for attack, before he moves forward to the assault, thereby causing him a loss of time.—Rear guard fight. The ground will determine if the retreat is to be covered by Infantry or Cavalry; to which is added part of the Artillery, if the ground is suited to its action; and the remainder of the Artillery is sent on ahead to the next position in rear, for the purpose of receiving the retiring troops under its protection at that point; and by a well directed and previously prepared Artillery fire, to hold in check the hotly pursuing enemy, and force him to make fresh dispositions for attack, entailing fresh losses of time.

(5.) *Fighting of Cavalry with Horse Artillery.* We have still to consider the part played in battle by Horse Artillery in conjunction with Cavalry. We have already remarked that, since the effect of fire has been so much improved, Cavalry must avoid remaining motionless within the effective range of the enemy's fire more than formerly. Consequently, every engagement, in which Horse Artillery works in conjunction with Cavalry, must be only and solely an *offensive* action.

Even, if the engagement as a whole bears the character of a defensive action yet the partial share borne by the Cavalry and Horse Artillery may have the character of an offensive action. (There are exceptions to every rule. For instance: we must not here exclude such cases as when a battery of Horse Artillery takes up a position for the purpose of decoying the enemy, and having succeeded therein, bodies of Cavalry which had been lying in a favourable position, screened from the enemy's view, awaiting the result, fall upon him. Similar surprises, and *ruses de guerre* are permissible wherever and whenever the enemy and the ground offer the opportunity).

For the employment of Horse Artillery in com-

bination with Cavalry the same rules apply in general as for the employment of Artillery in offensive engagements.

But as the Cavalry, united in large masses as a general principle wherever it is possible, is only brought under the enemy's fire when the object and the time for its attack have arrived, therefore the interval for the effect of Artillery becomes considerably shortened in comparison with the time which is usually allowed to Artillery in offensive engagements. The time, more especially, for the introductory cannonade at long distances, is almost entirely omitted and only ordered if the Horse Artillery is sent forward to strengthen a weak advanced guard, for the purpose of deceiving the enemy and to gain time for the coming up of its own bodies of cavalry. But if the bodies of cavalry are in position and the object of attack is decided upon and pointed out, then the Horse Artillery should as soon as possible, without introductory cannonade, advance to within decisive distances of the enemy (between 1,000 and 2,000 paces).

This advance of the Horse Artillery takes place therefore before the bodies of Cavalry intended for attack form line to the front from column of route, or deploy from columns for attack, and *the time for the Cavalry to form line and deploy,* as well as the time for any flanking movements which may possibly have become necessary and have been resolved on, *will be the time during which the Horse Artillery must exert its power.* This time is, in proportion to the circumstances, comparatively short, its duration being for a Cavalry Division *from a quarter to half an hour,* according to its strength. On this account then, the *Horse Artillery must seek quickly* a decisive action, and *advance as speedily as possible to within close distances*—(under 2,000 paces)—as before mentioned. The Horse Artillery likewise will direct its fire *entirely* with a view to preparing the attack *on that point* which is to be attacked, *regardless of the enemy's Artillery fire* from any other direction, and regardless of *other dangers* which it is the *duty of the Cavalry to ward off from it.* The Cavalry will, as it becomes exposed to the enemy's fire, at once

move to the attack as soon as it forms to the front in the formation which the Commander deems necessary. Just as the Artillery generally does in offensive engagements, the Horse Artillery, during the Cavalry attack, will direct its fire on the object attacked until it runs the danger of hitting its own Cavalry.

Not till then does it turn its fire against the enemy's Artillery. If there is room for the purpose, and the ground is favourable, the Cavalry commander will naturally make his attack as much as possible clear of the front of the Artillery position, so as to derive the advantage as long as possible from the effect of the Artillery. But this is not always possible, and movements will occur in which the Horse Artillery is completely masked by its own attacking Cavalry.

Here arises the question whether, when armed with rifled guns, it is better for the Horse Artillery to remain stationary at this moment, or whether they should as in the days of smooth-bore guns, limber up and advance, dash in front of their own line of Cavalry, and support the Cavalry attack with case fire. If Horse Artillery does the latter, it must begin its forward movement either when it is masked by its own Cavalry moving to the attack and can fire no longer; in which case it arrives too late, or at the most fires one round, and from a rifled gun one round goes for nothing. Or it has to commence this forward movement before it is masked, that is to say, before the Cavalry advancing to the attack has come up a-breast of it. Then the Horse Artillery foregoes the effect of its last rounds of shells, that is to say, of its best aimed and most correctly estimated projectiles, in favour of a round of case from the 4-pr., the value of which is very doubtful owing to its being fired in great haste. We are therefore of opinion *that the Horse Artillery should stand fast*, and operate against the enemy's Artillery—against his flank attacks—against his reserves—especially in the case where the attack terminates in a rearward movement, so as to hold in check the enemy's pursuit, by a well directed fire; and by maintaining its fire to indicate its whereabouts, and afford a secure place of refuge to its own Cavalry, in which it may reform. When, however, the

enemy's Infantry is in flight, and so demoralized, that anything may be attempted with it, then may Horse Artillery in the manner before alluded to, advance to within case-shot range.

If the attack of our Cavalry is successful, then it is a matter for the *tactical eye* of the *Horse Artillery Commander* to discern from the onward-pouring stream if the situation prompts him to *hasten after the Cavalry,* and by joining in the pursuit or taking up a fresh offensive position, to increase the success already acquired. *In this matter the Horse Artilleryman should never be given an order, but must decide on his own judgment,* for the Cavalry Commander and all his staff are laying about them in the midst of the enemy.

IV.—PRINCIPLES FOR THE EMPLOYMENT OF ARTILLERY IN CONJUNCTION WITH THE OTHER ARMS.

Having in the foregoing considered, firstly, the efficiency of the three arms in general; secondly, deductions for the combination of Artillery with the other arms; and thirdly, the fight itself; we are in a position to lay down the main principles which we deem well founded for the employment of Artillery in combination with the other arms.

The employment of Artillery must be considered in its threefold capacity:

(1.) In its distribution to other troops previous to the engagement. (Order of battle.)

(2.) In its distribution during the march. (Order of march.)

(3.) In its employment during the engagement.

We have already said so much in the preceding considerations on the fight as to the main principles guiding the tactical employment of Artillery during the engagement, that there only now remain the specific Artillery questions. On those however, we shall only presently speak just so far as they concern the other arms. There still remains a point which is of great

moment and should be noted, connected with the foregoing considerations, and following from the development of the fight—the employment of the Artillery during the engagement

We have seen, to wit, that it is the function of the Reserve Artillery of an Army Corps to prepare the principal attack of the main body of the Army Corps by a cannonade at decisive distances. And as a certain time is necessary for this preparation according to the nature of the Artillery, the Reserve Artillery must, as a rule, become active a long time before the main body of the Army Corps. Hence it follows that the Reserve Artillery does not belong to the reserves but to the Corps fighting the main action. If it is reckoned with the reserves and employed as such, and with them, that is to say, at the finally decisive moment, its whole efficiency would be lost, for when Artillery is only worked for a moment, its efficiency is, at any rate over-hurried, and with rifled guns becomes a dead letter.

Reserve Artillery should, however, by a well-directed fire extending over some time, bring about the moment of the decisive result; it might almost be said that it should furnish favourable opportunities for seeking the issue, and not be fetched up only at the last moment of the decisive result. Consequently, it does not belong to the reserves of the Corps, but to the body fighting the main action. How far Reserve Artillery should be employed in preparing the principal blow has been previously considered when sketching the course of the fight, where it is mentioned that it is combined either with the Artillery of the advanced guard, or with that of the main body.

In this way the combined effect of a mass of from 9 to 12 batteries on one object can be attained.

As regards the order of battle and the order of march, it is absolutely necessary that they must harmonize in the closest way with the main principles for the employment of Artillery in the engagement, for it is self-evident that Artillery cannot be correctly employed if it is not rightly distributed among the other troops, and *the troops should march in that order in*

which, as far as can be foreseen, they would be used; for in that sequence in which troops march, they are, as a rule, led against the enemy. The marching up of a body of troops from the rear past other troops is in most cases beset with difficulties, frequently even with such a disturbance of order, that if the evil effects of it have been once experienced it will not be had recourse to a second time without great reluctance.

(1) In the *order of battle* we can obviously here only speak of the special order of battle, as the general order of the higher degree is fixed, and is therefore for us a definite quantity. The guiding principles follow from the preceding considerations, and may be stated thus:—

In the case of a *Division of Infantry* operating by itself, a 4-pr. battery is usually assigned to the advanced guard, and the remaining three batteries (2-6-pr., 1-4-pr.) under one command to the main body, not under the orders of the commander of the main body, but under the direct orders of the commander of the Division, through the division commander. The 4-pr. battery of the advanced guard can be replaced from time to time, or reinforced by the other 4-pr. battery.

In the case of an *Army Corps*, its advanced guard may if desirable consist of Infantry alone, or be made stronger in Cavalry and weaker in Infantry, according to the ground in which the operations take place. It has generally happened that one Infantry Division has formed the main body, and the other Infantry Division has been partly formed into the advanced guard and partly into Reserve. The Division Commander of the last Division became the commander of the advanced guard. To him is assigned the Division of Field Artillery, with its staff, and, as a rule, he would take with him one or two of his batteries, as he would otherwise be disproportionately strong in Artillery.

The remaining batteries of his division should *never, however, as a principle, be attached to the reserve Infantry*, as this is no independent or detached Infantry brigade; but *must be assigned to the Reserve Artillery*, from which they can be sent to the advanced guard either for relief or as a reinforcement, whenever ne-

cessary. On the other hand, it will happen (if, for instance, the advanced guard is strong in Cavalry) that a battery of Horse Artillery is necessary for the advanced guard, which battery, according to circumstances, either belongs to the Cavalry of the Army Corps, or is taken from the Reserve Artillery.

This Horse-Artillery battery for the time being, forms with the Artillery of the advanced guard part of the distribution of the advanced guard, and is under the command of the Division Commander. The Artillery of the advanced guard will therefore consist of—

2 4-pr. and 2 6-pr. batteries,
or 1 4-pr. and 2 6-pr. batteries,
or 1 4-pr. and 2 6-pr. and 1 Horse Artillery battery,
or 1 4-pr., 1 6-pr., and 1 Horse Artillery battery,

of which one 4-pr. battery is attached to the *advance* of the advanced guard, precisely as if to the advanced guard of a Division operating by itself. This 4-pr. battery will, as a rule, be a field-battery, but may be, if on account of the ground the *advance* consists partly or entirely of Cavalry, a Horse Artillery battery.

The Artillery of the main body of the Corps consists of the field-division, which is attached to the Division forming the main body.

In the general "order of battle," one or two Horse Artillery batteries are attached to the Cavalry of the Army Corps, according as the Cavalry consists of one or two brigades.

We hope, in the interest of our Reserve Artillery, which should be as formidable as possible, that the case will seldom occur in which two Horse Artillery batteries are assigned to the Cavalry. But if it does happen, or if all three Horse Artillery batteries should be with the Cavalry, then the command of the Horse Artillery division in the general "order of battle" passes over from the Reserve Artillery to the Cavalry of the Corps. In conformity with the development of the course of the engagement, it is desirable with a view to promoting as vigorous and as concentrated an employment of Artillery as possible, to distribute the Horse Artillery batteries not to the various Cavalry

brigades, *but to retain them united in the hands of the Division Commander, acting under the direct orders of the Cavalry Commander.*

The Reserve Artillery consists of the remainder of the batteries; therefore not only of those belonging to it in the general "order of battle," but in addition those given up to it by the division attached to the advanced guard. This arrangement is, therefore, urgently necessary: any assignment of Artillery to the reserve Infantry brigade would occasion a dangerous dissemination of our Artillery force. If it were not done, the Reserve Artillery would be weakened to a dangerous degree. It already consists of a Field-division, and one or two Horse Artillery batteries. From it are taken all the detachments for special objects, and if in addition a Horse Artillery battery is attached to the advanced guard, and another battery is detached, then it might easily occur that the Reserve Artillery would consist of only three batteries, and therefore too weak unless reinforced by some batteries given up by the advanced guard. (The French only give two batteries to each Division, and one to the Cavalry. In their general "order of battle" their Reserve Artillery is stronger than ours by five batteries). According to our main principles, the Reserve Artillery would consequently consist of a Field-division, one or two Horse Artillery batteries, and a 4-pr., or a 4-pr. and a 6-pr. battery from the Division which gives the advanced guard. We have already mentioned that in the special order of battle, no Artillery is to be attached to the reserve Infantry brigade. Should the reserve Infantry brigade have, as an exceptional case, to accomplish some "object" in the engagement on its own account, and therefore to play the part of a detached brigade, the commanding general has always the power to assign a battery from the Reserve Artillery as long as this detachment lasts.

(2.) As regards the *order of march*; this is regulated for Artillery in accordance with the "call" for that arm adverted to in the reflections on the engagement, with the single modifying consideration that Artillery naturally should never be permitted to march quite in

the front when appoaching the enemy, as during the march it is never in a condition for fighting.

We have seen that, at the commencement of the engagement, the battery of *the advance* or of the advanced guard of a Division operating by itself is very quickly called into action. It must therefore march quite at the head, that is to say, *in rear of the leading battalion.* The remainder of the Artillery of a Division operating alone, as also the Artillery of the main body of the advanced guard of an Army Corps are required to become speedily active, if it results from the fight of the *advance* that the advanced guard must come into action. This Artillery consequently marches *well forward at the head of the main body,* of course allowing an Infantry battalion, or as the case may be, an Infantry regiment of the main body to precede it. It marches under one single command, by which arrangement greater security is obtained for its employment in masses.

With regard to the place of the Reserve Artillery of an Army Corps on the march; this must be accommodated to the march of the remainder of the Army Corps, and this again according to circumstances and according to the ground, but in any case the *Reserve Artillery of the Corps,* which has to prepare the engagement of the main body, *should not be allowed to march too far in the rear.* In perfectly open ground it happens that the Reserve Cavalry marches *in advance of the main body* of the Corps, in order to support the advanced guard opportunely against superior hostile Cavalry. In such a case it is just as desirable, to have at disposal, as quickly as possible a large mass of Artillery, and it becomes then quite justifiable to allow the Reserve Artillery under the protection of the Reserve Cavalry to march *in front of the main body of Infantry.* But as a rule the Reserve Artillery will march under the protection of the main body of the Infantry of the Army Corps, therefore *behind the first Infantry regiment or behind the first Infantry brigade of the main body of the Corps,* according to the circumstances of the case, and according to the number of troops which it is deemed advisable should precede its

march for its protection in the terrain. *The furthest place to the rear is in rear of the main body.* Under all circumstances Reserve Artillery must march *in front of the Reserve Infantry,* for it is absolutely certain that it comes into action before the latter. We assume as a *fact which speaks for itself,* that Reserve Artillery on the march should *not be scattered* but always march in a body. When speaking of Reserve Artillery we naturally mean the batteries alone, not the ammunition columns nor the trains.

The Artillery of the Division forming the main body of the Corps, combined under a single command, marches behind the leading battalion or the leading Infantry regiment of the Division. If the place of the remainder of the Division is taken by the Reserve Artillery, then the latter may be allowed to march between the two Infantry brigades of the main body.

The objection might be easily raised to the main principles set forth in this case, that the Infantry marches too far in rear. If for instance the division Artillery of the main body (4 batteries), marches behind the leading Infantry regiment of the main body, the Reserve Artillery (6 batteries) between the two Infantry brigades, then the last Infantry brigade of the main body, and the Infantry reserve behind it, march farther in rear, by the distance occupied by 10 batteries in column of route, than they would if the whole of the Artillery marched behind the reserve Infantry. A battery occupies a depth of about 300 paces on the march, and covers a length of road which is passed over by Infantry in three minutes. The greater masses of Infantry consequently come up to the scene of action 30 minutes later. If we reckon in addition the time for coming into the alignment, for disposition, and for rest which is needful in order to get wind after marching before moving to the attack, we just get the necessary time for a favourable bringing about of the decisive result by the effective cannonade of a large body of Artillery. Again the Infantry of the present day is far too costly and valuable an arm, to be allowed to await the effect of Artillery like so much food for powder within range of the hostile Artil-

lery. It is better to utilize the time while it is coming up.

Artillery attached to Cavalry may always be allowed to march *behind the leading squadron of the main body of Cavalry*, and if it consists of several batteries, all should be under the Division Commander. If a Cavalry Division is exceptionally ordered to operate alone, we should *not like to see a battery apportioned as a principle and for always* to the advanced guard, because this advanced guard is a body capable of easy movement hither and thither and has to see and to feel more than to fight. If according to our proposal the whole of the Horse Artillery marches in rear of the leading squadron of the main body, the leading battery is foremost to hand should it occur exceptionally that only part of the Artillery is to move up to the advanced guard. But as a rule Horse Artillery batteries attached to Cavalry must be employed in combination with a view *to bringing about, by massing them as much as possible, as speedy a decisive preparation for the attack of the Cavalry of the main body* as possible, and consequently as a rule their place will be in mass in rear of the head of the main body.

We have thus laid down the entire rules for "the order of march," *just as if we were engaged in an advance in proximity to the enemy. The same principles apply to retreats in the neighbourhood of the enemy,* provided it is imagined that every battalion, squadron and battery has been reversed. At the same time it is pre-supposed that we are not at the commencement of the engagement, as were it otherwise, especially in retreat, much would be altered; as for instance if the Artillery were sent forward to a new defensive position or left longer in the old one in order to protect the other troops or to permit of their being quietly withdrawn. In this case, in place of the main principles for the order of march, those for retreats would be applicable, which have been already discussed. Just as little have we to say of marches carried out at a considerable distance from the enemy, when considerations of convenience prevail as to the march, and

they resemble more closely marches in time of peace. Still less can rules be laid down for flank marches in proximity to the enemy. Whether in these cases the enemy should be attacked and defeated with one part of our force, while the other part proceeds with its march, as we saw at Schweinschädel, or whether, under the screen formed by the advanced guard in position, the march should be carried out, the advanced guard afterwards following as a rear guard; how much Artillery should be employed in fighting, how and where Artillery should march; all these questions must be decided by circumstances, by the ground, by the measures and the condition of the enemy, and cannot be committed to rules.

We ought now to consider the employment of Artillery during the engagement. But as we have already developed our principles thereon in detail, we have only now to add some special rules for the Artillery in the engagement, so far as they are of interest for the other arms.

V.—SPECIAL RULES FOR THE ARTILLERY.

(1) *Artillery when commencing to fire must first determine the range*; that is to say, it must determine the elevation by means of a steadily delivered, accurately pointed, carefully observed trial-shot. After that it may proceed to a more rapid fire, but even then careful observation should never be omitted. The most rapid shell fire, which can be expected from Artillery, is consequently, that from the flank of half batteries, in which case the succeeding round is not fired off, until the one just fired has struck the enemy. (This is indeed a very rapid fire and would consume the entire limber ammunition in less than an hour.) If the firing is more rapid, less is hit, and ammunition is wasted. Case fire alone, when at close ranges on the defensive, should be delivered as rapidly as the quickness of loading permits. In the Artillery we are still engaged in trying the employment of battery salvoes at moving

objects, but we have not as yet arrived at definite conclusions whether to introduce these salvoes into the regulations.

(2) Firing against moving objects has always been the most difficult task for the rifled gun.

For this reason *it is also difficult for the enemy to hit our Artillery in motion*, if we only open out to a wider front and advance straight on the enemy, as by so doing we only offer as a mark to him small moving objects in our single guns. A line of Artillery which resolutely advances at a rapid pace and with open intervals straight at the enemy, and to within close distances (1,000 to 2,000 paces) seeking a decisive engagement, is not easy to hit, and *must have great ill luck* if it does not succeed in unlimbering and firing.

(3). In order to carry into effect and to employ Artillery in the engagement in harmony with the other arms, every *Artillery position* must be determined by the Commander of the Troops and be *reconnoitred* before it is taken up, as well as the approaches to it, at any rate by the Artillery Commander. Here it may be remarked, *that the highest summits of the hills are not always the most favourable Artillery positions*, as they do not always permit of free movement to the front and rear. When a piece of undulating ground has been sought out as an Artillery position, the line selected for the position of the Artillery may offer various elevated points for the different batteries; the highest of these points usually allows of the best survey all round, and this is generally chosen as the best Artillery position. But as a rule, it will be the most conspicuous mark for the enemy's fire, and consequently the battery placed on that position would be speedily dismounted. It is therefore well to place the batteries on the ridges of the hills, rather to the right and left of such peaks, utilising the ridges as cover, and to leave the summit free for the use of the Commander of the Troops, to watch and conduct the battle, and for the Commander of Artillery to observe the effect and conduct of the cannonade.

(4). Artillery *must always fire on the other troops* whenever they are within effective range, and should

only fire at the enemy's Artillery when there are no other troops to fire at. This maxim although very difficult to follow, must be firmly adhered to, as it leads to victory; for if the other troops are annihilated, the enemy's Artillery falls into our hands. If then the Artillery, which in consequence of our observance of this maxim has fallen into our hands, shows little or no trace of the effect of our guns, no reproach on that account should be cast on our Artillery; for if it had done otherwise, the enemy's Artillery would not have fallen into our hands. The firing should not be diverted from the hostile troops, as long as they remain within range of our shot, upon the batteries, except in those cases when hostile batteries are occupying or intending to take up positions which might be dangerous to us, as for instance for flanking purposes.

(5). *It is not always advisable to answer every shot of the enemy.* If the enemy are guilty of wasting their ammunition at long ranges, let it be a subject for congratulation, and let the fruit thereof be gathered by a contest at close ranges; but the fault does not require to be imitated.

The fight should never be commenced at a distance beyond 3,000 paces. Firing at greater distances is only permissible if the object is to harass some particular locality, if we see large bodies of troops in motion, or if we wish to follow up a flying enemy with Artillery fire, and cannot get any nearer to him, or if it is our object to delude the enemy by a detaining cannonade until reinforcements arrive, and so forth; in short, only if it is our intention to cause uneasiness.

(6). *Artillery in action should never be allowed to retire from its position to seek its reserve ammunition*; its ammunition must be fetched.

Artillery, which takes up a position by order, must not quit it, especially not retire from it unless, firstly, it receives an order to that effect; unless, secondly, it is dismounted, in which case the dismounted guns are sent back singly, those capable of being fought, remain; and thirdly, unless the general situation of the engagement endangers the existence of the Artillery, and their persisting in the position would be of no further

avail. In all other cases Artillery sticks to its position even if the fire of the enemy's skirmishers comes near it, for in so dangerous a decisive moment it will be of greater use in supporting the other arms in comparison with the damage which it would itself sustain.

The position should only be abandoned for a rearward movement at a walk (even by Horse Artillery), and the pace should only be quickened later on in the retirement, in the event of the retiring Artillery having to reach a certain position further to the rear before the other troops, in order to receive them under its protection at that point, or in case it is desirable as quickly as possible to unmask or strengthen some guns in a position in rear.

(7). *Artillery in action should never be relieved by other Artillery during the engagement,* but should be reinforced only, even if only part of their guns are serviceable; as a superiority in number of guns gives a great advantage in an Artillery engagement. The single exception from this is when the division-Artillery of the Division to which it belongs is following some specially ordered movement, and has therefore to be relieved by other Artillery; otherwise it is an axiom to be strictly observed that Artillery, which is attached to other troops according to a special "order of battle," forms an integrant part of these troops, and cannot be taken away at pleasure, until an alteration in the special "order of battle" is promulgated. It is only by a strict observance of this axiom, that we can ensure that the Artillery, and the other troops with which it is associated, consider themselves intimately connected with one another, and fight together with a mutual exchange of effect.

(8). In consequence it is very seldom necessary that Artillery should have a *special escort* assigned to it; for the other troops and the Artillery which look upon themselves as part and parcel of one another, will not leave each other in the lurch, and if battles are carried on after much the same principles as we have delineated, attention must always be paid to the positions for Artillery, and thence develops that best

protection for Artillery—the mutual dovetailing of the different arms. In the case alone when at the commencement of the engagement a greater or smaller body of Artillery is employed, while the remaining troops are still on the march, it may happen that one flank only of the Artillery line is protected by the engagement of the advance, and it then becomes necessary to look to the protection of the other flank. It is the business of the Commander of the Troops to give the necessary order: but it is the business of the Artillery Commander to apply for it. Troops employed in this way to cover one of the wings of the Artillery should never hug the Artillery as they might in that case suffer too much. Their place, if they consist of Infantry, is several hundred yards to the front and on the flank, concealed by the ground; if they consist of Cavalry, to the rear and on the flank of the wing to be covered. The reasons for this are so evident that they require no explanation.

We do not consider the attaching of a special escort permanently to the Artillery, for a whole day or for a longer time, a beneficial arrangement. If we intend this permanent special escort to consist of Infantry, it will not always be able to follow the quick movements for long distances, of which modern Artillery is capable, and consequently it fails at that moment in which it is most urgently required. If it is intended that the special escort should consist of Cavalry, it will very seldom be adapted to the ground. Therefore, *as a general rule permanent special escorts for Artillery would not fulfil their object,* and as in the remaining cases they are considered unadvisable, they might *entail a waste of Infantry or Cavalry power which in many decisive moments might be greatly regretted.*

(9). From the whole course of the development of the Artillery engagement, as it now takes place, and from the reflections which we have made on the effect of Artillery, it has been sufficiently evident (though not as yet explicitly stated), that a change of a few hundred paces for Artillery would be an error on the

part of the Artillery, for a battery which has determined the range from one position, is more effective from this position, than if it advanced 200 or 300 paces nearer, where it would have to determine the range afresh. The distances which batteries should pass over in the engagement in order to approach nearer to the enemy, should not be less than 1,000 paces. It is of course understood that special circumstances may give rise to exceptions. For a general rule we have not drawn shorter limits than distances of 1,000 paces. Within these limits the nature of the ground will mostly determine the nature of the operations with absolute necessity.

VI. PEACE MANŒUVRES.

After first casting a glance at the employment of Artillery in conjunction with the other troops at peace manœuvres it is our intention to bring these observations to a close. It would appear at first sight as though there was nothing left to be said on this matter, when once the main principles for the employment of Artillery in war are established. Nevertheless certain difficulties do arise at these manœuvres, which never occur in war, and to which a mere spectator in the sharpness of his criticism is very prone to pay no regard.

Peace manœuvres are either drills with a mixture of all arms, without an enemy, or manœuvres of one mixed force against another.

At the drills with a mixture of all arms without an enemy, it is the object of the commander partly to practice himself in the giving of orders and in the leading of large bodies, and his subordinates in carrying out the orders; and partly to furnish a normal picture of a battle in order to enable the troops to judge intuitively how their different functions should work together. For the former object, the drills *are extemporised,* that is to say, no previous dispositions are given out, a mode of procedure which answers the intention well and is very suited for the purpose If in this case the inconvenience arises that the troops

and spectators, who are intended to gain knowledge from these manœuvres, do not become acquainted with the suppositions with respect to the enemy and with respect to the remainder of their own troops, which the commander has assumed, and consequently do not always know what to think of the movements, then to a much greater extent do the evils resulting therefrom appear magnified in the case of the Artillery, because we do not see at what it is firing, nor whether and what it hits, and how great its effect is considered. Supposing moreover, the Artillery is employed in as rational and natural a way as we have seen it at the instructive Division-Exercises; for instance that the final attack of the other troops is launched upon the spot prepared by the Artillery in a practicable way, that is to say, the guns have been firing, from a distance of 1,000 to 2,000 paces; then at this juncture, supposing the attack is assumed to be successful and that the Artillery is required in front to follow it up, there arises an exceedingly tedious pause in the fight, very unlike reality, until sufficient time has elapsed for the adjutant to ride to the rear, to communicate the order, and for the order to be understood and carried out.

Such pauses in the fight would not occur in war, because the Artillery would see the resut of the attack and anticipate the order. In these cases, therefore, it is even more necessary than in war that the Artillery Commander should never be with his batteries in peace, not even while they are in action, but always with the Commander of the Troops. This desideratum should be had regard to on all occasions at the Division Exercises this summer.

In the case when orders are only to be given out on the spot, and it is not the intention to give out any dispositions with regard to the manœvures, it is evidently advisable to communicate to the Artillery Commander whether the attack is to be successful or beaten off, in order that such pauses, which cripple the picture of the battle, may be shortened as much as possible. Supposing moreover, the evident inconsist-

encies of such exercises in general are considerably improved by this means, that for the most part we are ourselves limited on the drill-field, and must stick to the most common-place suppositions in order chiefly to introduce a change in the movements, then will this inconvenience tell more especially to the disadvantage of the Artillery, owing to the improvements in the effect of its fire, as the extension of the drill-field can not be increased in proportion with the range. Owing to this, there will be scarcely more than a single Artillery position on most drill-fields, and if we consequently wish quite naturally to make use of it, no change can be made in the employment of Artillery at the drills.

The Commander of the Troops will find himself sometimes under the necessity, entirely for the sake of the manœuvre, to commit other anomalies with his Artillery, for instance, to permit the Artillery to move forwards or backwards only 300 paces, and in doing so to assume that there is more space, &c.

At any rate with regard to all suppositions of this nature, it seems advisable *that the dispositions and suppositions which are made, should be notified to the troops as well,* so that they may learn as much as possible from the exercises which are carried out, and more especially know from experience which of the movements that have been made would have been otherwise carried out if there had been an enemy in front, and had they not had occasion to pay regard to the prescribed circumstances. For otherwise we run the danger of the troops, who had practiced the manœuvres in peace, putting them to the test in war in precisely the same manner, until their fingers were burnt.

For the above mentioned reasons we are of opinion that we must not entirely forego the drills with previously arranged dispositions, at which everybody knows what is going to happen and what are the commander's ideas before the movement commences, as they have also their useful side, and, as a rule, furnish pictures of battles like reality.

As regards the manœuvres of one detachment of mixed troops against another, the old complaint of the

Artillery comes before us, that too little consideration is paid to its effect, and there is the more inducement for this complaint since it fires from distances beyond a quarter of a mile, and the hostile troops at times do not even remark that they are being fired at. And there is no way of taking any decided steps to remedy this inconvenience, for no man can judge at the distance of a quarter of a mile (German), at what the hostile Artillery is firing; still less whether it would have hit, had it been loaded with real projectiles. In this case umpires could not even help us, for they cannot be in both places at the same time, neither can they during the changing course of the manœuvre control every distance and watch every shot to see if it is well laid, and if it would have hit the mark. For it has so happened that an umpire of Infantry, who had forbidden the further advance in mass in consequence of Artillery fire, had afterwards become aware that the hostile Artillery had not fired at this Infantry at all, for the simple reason that it had not remarked it. He had consequently to alter his decision. But the Infantry had lost time in their operation, whereas perhaps in war they would have captured the hostile batteries.

Moreover, no Commander of Infantry or Cavalry can be blamed *for the fact that he does not pay immediate attention to every hostile shot at peace manœuvres*, and that his troops are not in the habit of becoming sufficiently alarmed at every shot. On the contrary, he must and will eagerly seek for an opportunity of once making an attack on the hostile Artillery in action, in order to be able to say to his troops *that they are fit to storm a battery*. For if they are forbidden to do it in peace, they cannot be expected to attempt it in war.

On such occasions there remains nothing to be done except to do justice to the performances of both sides by a fair decision, without prejudicing the self-love and confidence of one or other arm, but giving especial prominence to the circumstance, that the result of the attack and of the fire would in real war have depended on the goodness of the troops.

Finally, at the peace manœuvres Artillery fights like other troops, with the condition that the dead foe remains alive and fights again. As it therefore never becomes necessary to receive the shattered, decimated, beaten, or utterly annihilated troops under the protection of the Reserves, the latter are usually employed on the wings instead of behind the centre, and this leads to a constant extension of the front and a surrounding of the enemy's wings, accompanied by a weakening of the front, which would entail great danger in war. The longer the range of the Artillery, the more it inclines to positions encompassing or out-flanking the enemy; for the guns, of which as few as possible are employed at the commencement along the front, do not become silenced by a preponderance of guns, but are in full vigour if the guns from the out-flanking positions co-operate with them. Such anomalies will always arise and cannot be avoided. It is only necessary to be acquainted with them, in order to keep clear of them in real cases.

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ABOUT TACTICS.

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ABOUT TACTICS.

CHAPTER I.

Moral Force.

The general result of a campaign is determined by the result of one or more battles. Success in these depends on the skill of the general and on the superiority of the troops in physical (or material) and moral strength.

The following remarks will refer to the last two points only.

We include under the term physical or material strength —numbers, armament, &c.

By moral force we understand the spirit which enables a man to overcome the instinct of self-preservation, to stifle the natural impulses which urge him to fly from, rather than to face danger.

The latter is the most important; both because the real final object of our efforts in a battle is not to destroy the enemy's troops so much as to break down their resolution, and because without it no troops can turn to account the material advantages which they may possess. What for instance, is the good of the best rifle in the hands of the most practised shot, if the eye is blinded and the hand trembling with excitement?

It is on the moral force of the troops then that the fate of battles mainly depends; and no tactical study can be of any real value which does not take it into account or which subordinates it to mere questions of form or system.

Moral force can hardly be created. The germs of it at least must exist in the individual soldier. But it may be cultivated and strengthened by military training, by the habits of obedience, order and *esprit-de-corps* which it is the object of discipline to develop and which grow by degrees into the nature of a good soldier. It will therefore be found most certainly and uniformly in regular armies, composed of

troops which have passed through a certain period of service. Such troops have on occasion shown extraordinary indifference to danger.

But where an army is composed of men raised under the pressure of emergency—just before a campaign—the necessary spirit (or something very like it) may be stimulated (forced, so to say) by other and more active influences. Such are strong party or religious spirit, love of country, hatred of the enemy and so on. These influences however are not usually lasting in their action. Enthusiasm does not, like wine, improve by keeping. Armies of this description have, as a rule, accomplished very little, and are rarely to be depended upon. We need only refer to the French armies in the early wars of the Revolution and to the Spaniards in the Peninsular War.*

The highest development of this spirit—moral force in its most perfect form—is to be looked for where both influences are at work at once; where men who have had a sufficient military training are engaged in a cause which stirs their feelings deeply.† Enthusiasm cannot be kept from evaporating unless held together by discipline; and it is only where, as in the German armies, the principle of duty is instilled into the soldier until it becomes the motive power of his conduct, that quiet persistent heroism can be expected from the mass.

No army can have a suitable system of tactics unless it is based—both as regards the forms of drill and the principles of which those forms should be the expression—on the peculiarities of the men, unless it is calculated to make the most of the strong points, and screen and afford support to the weak ones in the national character. No adaptation from other armies of tactics, which may have been eminently successful with them, will prove satisfactory unless the difference of temperament be taken into account.

It may even be necessary to modify tactics temporarily according to the character of the enemy with whom we happen to be engaged. The very same mode of action which may have led invariably to victory against one, may be simply fatal when used against another. Thus, Marshal Bugeaud says "Our tactics were always the same, whether "against the Spaniards or the English. Our columns used "to rush forward without much preparation to attack. The

* The newly raised French levies in the late campaign afford another, and perhaps the most telling, instance.

† As, for instance, the German armies in the late war with France.

"Spaniards were invariably put to flight; but the English "stood firm and fired coolly and so repulsed our attacks with "loss."

Though much may be done to strengthen it, we can never hope to find the spirit of troops so absolutely perfect as to suppress the instinct of self-preservation altogether. There are no troops in the world, Germans, French, Russians, or English which will stand being shot down to the last man. Human nature is always and everywhere the same. The famous phrase "La garde meurt, elle ne se rend pas" would most certainly not have been acted up to, even if it had been really used. And it is now pretty notorious that it belongs to the category of those artistic effects with which French writers are fond of at once garnishing the dry facts of history, and flattering the national vanity.

The difference between good and bad troops lies then in the greater or less amount of loss which they will stand without flinching. Experience has shown that a loss of 30 per cent. is about the utmost that has ever been endured by the best troops.

Let us endeavour now to realize the actual circumstances of a battle, and the process by which the resolution of troops is gradually undermined, and the instinct of self-preservation worked upon, until the former at length gives way and the men break and run.

Every body of troops goes into action with a certain amount of resolution. Not one soldier probably ever made up his mind to run away before he came under fire. But what are the scenes in which he finds himself, and the sights and sounds which throng upon his senses, and under the influence of which his resolution is to remain unshaken? If we recall them for a moment, and think of the excitement which they inevitably produce, we can readily understand how the soldier's fancy becomes heated and magnifies the dangers which surround him, until a company of the enemy grows into a battalion, and a single shot in flank or rear seems the certain harbinger of hopeless rout.

It is just in these trying moments, too, that he misses the familiar formations of the drill-ground, and the cheering presence of the officer to whom he has been wont to look. There are gaps in the ranks, and the company wants telling off afresh; his captain has been hit, or has his whole attention engrossed by the enemy, and the man feels instinctively that the old bonds have been loosened, and that he must think for himself.

All these impressions are at work at once, and under their influence the best troops in the world will sooner or later become demoralized.

Victory remains with the side whose moral force holds out longest.

Our aim and efforts must therefore be :—

I. To bring our men into action with as much moral force as possible.

II. To sustain their moral force in action as long as possible.

III To break down that of the enemy quickly and thoroughly.

I. The means which we have at command for cultivating and strengthening the moral force of our troops have been already indicated. They must be carefully and consistently applied while peace lasts. 1. The first is military training, *i.e.*, drill and discipline. A man may be taught his drill, may learn the use of his weapon, and be fitted to take his place in the ranks in a comparatively short time. But this is not enough. The forms of drill and the habit of instantaneous mechanical obedience to the word of command must be thoroughly ingrained in him. It is for this reason that constant practice and the utmost precision in drill are necessary; and the most minute and apparently vexatious regulations as to cleanliness, order in barracks, &c., are insisted upon, not only that bad habits may be got rid of, and order and punctuality instilled, but also that the soldier may learn to exert all his powers, and devote his utmost attention to the orders of his superiors, and habitually to carry them out with the most extreme and intelligent care. The process must be continued until the spirit of discipline has penetrated into and become a part of the man's nature.

2. In the second place the training of soldiers should be such as to raise them intellectually and morally. Their minds must be formed by suitable education; their strength of will and nerve steeled by gymnastic exercises (swimming, riding, &c.), and teaching them to rise superior to external influences. Thus, when troops are coming back tired to quarters, it is not a bad plan to order a march past.

Their better feelings must be cultivated, their sense of honour developed, love of country, devotion to the king, pride in their profession and in their regiment should be cherished. They must learn to feel confidence in their weapons, which they will do as they become familiar with them and skilful in their use. And here we might suggest

a doubt whether it be altogether advisable to practice men very often in retreating from a position they have attacked.

These two points—the professional and moral training of the men—must receive even more, and more careful, attention from the moment when war breaks out. The routine of discipline is then liable to constant interruption, its essential principles must be upheld more rigidly than ever.

Under the second head it may be observed that the spirit of an army may be stimulated by means of their religious and patriotic feelings. Such appeals at such a time are sure to be effective. Also, by working on their local and provincial prejudices and the *esprit-de-corps* of regiments; these are valuable levers to stir the men on occasion.

Further, by the example of the officers, both in bearing hardships and privations cheerfully—in which the younger officers especially will find their opportunity—and in maintaining a calm and confident bearing under all circumstances. Soldiers are very quick to notice such matters, alarmists are therefore most dangerous.

Lastly, the men should be well cared for, and when they have had unusually hard work, should receive double rations or an issue of liquor.

II. How is the Moral Force of the Soldier to be kept up in Action.

1. German troops only look to their officers. They acknowledge and respect their intellectual superiority, and submit to be wholly guided by it. We cannot conceive such a cry among us as "En avant les épaulettes." It would be considered discreditable to both officers and soldiers.

We conclude then that the firmness of troops in action depends in the first instance on their officers. If they are cool and collected, and give their orders in such a way that the men feel confidence in them, the latter will not think of giving way. On the other hand an officer will lose control over his men—

If he loses self-possession and gets over-excited, he will make them so.

If he hesitates or vacillates in his orders.

If he lets them see that he thinks matters are looking serious.

Above all, if he seems deficient in personal courage.

Should there be any men who cannot be kept up to their

work by the example and moral influence of the officers, then physical coercion—sword or revolver—must be resorted to without hesitation. Hence the importance of the supernumerary rank in order to check the first symptoms of cowardice.

2. In the excitement of a battle, soldiers cannot be expected to think much; they must act almost mechanically. Therefore no manœuvres should be attempted but those of the simplest character, and which have been so thoroughly practised on parade, that the words of command are obeyed almost instinctively. Otherwise disorder will ensue, and disorder at a critical moment is pretty certain to entail the collapse of moral force.

It is a doubtful advantage, therefore, to make changes, even for the better, in drill shortly before a war; for the men are accustomed not only to the forms of drill, but to the very words of command; a change in these would therefore tend to weaken the hold the officers have over their men; and anything, however slight, which has such a tendency is to be avoided.

3. The men should be kept as much under the officer's eye as possible. In the present day much of the infantry fighting is done in skirmishing order; where, on account of the greater space covered, the men are less directly under the influence of their officers.

This space, therefore, must never be allowed to be greater than is absolutely necessary. For instance, in defending a village, it is better for an officer to keep his company together in one building than to disperse it in several; and it is still better if the men can be posted in front of the houses in a ditch, where, be it remarked, they are less liable to suffer from the enemy's artillery. In such a position, the officer has his men in hand, and can reach them with voice and eye. The men, too, have more courage individually than when stowed away in squads in a number of houses, the windows of which look to them less like loopholes for their rifles than inconvenient channels for the passage of the enemy's projectiles.

4. The skirmishers should be assembled the moment the immediate object of their employment has been attained. The individual soldier recovers courage when he finds himself back again among the mass of his comrades and in the presence of his officers. Exaggerated rumours of loss are always prevalent during an action, but when the soldier takes his place in the old ranks, and finds them pretty much

the same as he left them, he at once convinces himself that the fire of the enemy is not so deadly as he had been fancying.

The officers themselves gain confidence and energy as their sections and companies reunite. They seem to realize once more that they belong to a battalion, a brigade, and are parts of one mighty organization.

5. It is a good thing to keep the men moving when the situation becomes too trying for them. An advance stirs their blood and their courage revives. Forming column, music, cheering, &c., all tend to help men over the uncomfortable feelings which an action is apt to excite.

III. THE MORAL FORCE OF THE ENEMY MAY BE BROKEN DOWN BY OUR FIRE FROM A GREATER OR LESS DISTANCE, OR BY A CHARGE, *i.e.*, HAND-TO-HAND CONFLICT.

The immediate effect produced by our fire is the loss of men. This is not, however, our main object, for victory is not gained by the destruction of the enemy's physical, but of his moral strength. We don't shoot a thousand men in order that the enemy may have so many less to fight us with, but in order that the resolution of the remainder may be shaken and they may take to flight. It is only then, *i.e.*, during the pursuit, that we can afford to look principally to the material losses to be inflicted on the enemy. We had rather in fact weaken a battalion by 50 men, if that will induce the rest to run away, than by 100, if the survivors stand their ground.

1. In order that the moral effect which we want may be produced by our fire, it must strike the enemy *unexpectedly*. Presence of mind is only a relative term; even the coolest men require a certain interval of time to recover their equanimity under the effects of a surprise. We have only to think of the confusion which follows on a sudden alarm of fire. The same sort of thing must happen among soldiers when a storm of bullets is all at once showered upon them. The mind for the moment loses its control over the body; the legs run away of themselves.

It is on this account that the moral effect of fire from flank or rear is so great; such fire is almost always unexpected; it comes in the nature of a surprise; and any but the very best soldiers are apt to get flurried by it, and fancy that their retreat is in danger.

This too is one reason why it is so very important to find cover for the troops both in the attack and defence.

Great care must be taken to prevent men from betraying their presence to the enemy by firing too soon or from too great a distance.

2. Again, the moral effect of fire is intensified, if the loss of men caused by it occurs rapidly. The shorter the time, the less will the enemy be able to recover his coolness and self-control. Every one says to himself "If this sort of thing goes on for another ten minutes, there won't be one of us left alive, we can't possibly stop here." And the first one who flinches gives a welcome signal for a general flight. We must train our men, therefore, to get as close as possible to the enemy and to *concentrate* their fire. Fire at short range, say 200 yards, has a fearful power (all the more with us, because our people keep their heads and take good aim). It cuts the enemy down literally in crowds.

Concentration of fire has the same effect. Two batteries, for instance, firing each at its own mark, might very likely oblige the enemy to fall back at the end of an hour. The same batteries combining their fire on one of the objects, would be pretty certain to attain the same result in ten minutes, and may then repeat the operation on the other. Besides at any given moment of an action some one object is sure to be of more importance than any other, and the sound strategical rule should be applied "to neglect all secondary objects and aim exclusively at the decisive point."

It is possible then, where the above conditions are obtained, that the enemy may be put to flight by our fire alone. But, as a general rule, the effects of fire make themselves too gradually felt to decide the battle; experience shows that either from distance, or excitement, or owing to the enemy being under cover, the hits are comparatively few; and, though the moral force of the enemy gradually dwindles away, something more is wanted to break it down altogether. This last touch—the last straw that breaks the camel's back—is given by our advancing to the attack, by the charge.

The soldier, whose nerves have been already shaken by our fire, may still have resolution enough left to stand the chance of being hit by one of the bullets which are flying about, but not enough for a hand-to-hand fight. Seeing the ever-increasing masses of our troops before him, and marking their steady advance, he fails to detect the smallest chance of personal safety for himself if he once allows them to close with him; and, as they continue to approach, he will find it necessary to retire.

At the same time we must not forget what is meant by receiving fire at close quarters in these days; and must therefore recognize the fact that our attack will certainly fail, if the enemy stand firm, if the mere moral effect, produced by the advance of our troops, is not enough to overthrow his resolution and induce him to run.

What conditions, then, will justify us in expecting that it will be enough?

If the enemy's troops are very indifferent ones;

If their resolution has been severely shaken by our fire;

If the charge be made unexpectedly—from no great distance—with great speed;

With considerable numerical strength; and with great energy and decision. In former times it was a common practice to make the men attack without loading—so that there could be no stopping to fire.

Where these conditions exist we may hope to succeed.

The enemy must be stunned, so to speak, by the sudden appearance of our men rushing upon him in an apparently never-ending stream. It was in such a state of stupor that some French battalions at Hagelsberg (27 Aug. 1813), finding their retreat barred by a wall, suffered themselves to be literally slaughtered without even attempting to resist.

We consider then that the element of moral force is the one which is in most cases decisive on the field of battle. It ought therefore to lie at the root of all tactical arrangements and must be taken fully into account, if tactical questions are to be discussed to any practical purpose. The soldier is and always must be neither more nor less than man, however we may train him and develop his powers. This simple fact alone should satisfy us that tactics may be improved, but cannot be revolutionized with advantage. Changes are unquestionably necessary, as the weapons in use are rendered more effective; but it will not do to attach unlimited importance to these improvements. If we do, we shall only arrive at exaggerated views, which will not bear the test of real work, and indulge in false hopes, which will let us down roughly at last.

We may fairly ask, for instance, whether some such exaggerated notions are not prevalent with respect to the absolute superiority which the defence is supposed to have acquired in consequence of the improved fire-arms of the present day.

CHAPTER II.

Attack or Defence.

The great importance which belongs to the attack may be estimated from the fact that all armies alike are in the habit of priding themselves especially on their superiority in it. Latterly, however, it has always been thought necessary to add as a saving clause: "More's the pity, for in the next war we shall be obliged to act more on the defensive, and let the enemy attack us."

It would be a real pity if this view were to be generally adopted among us. We should shut ourselves out from the path which leads most surely to success.

In the wars of the future enormous armies will be employed; armies so large that, when concentrated, it will be next to impossible either to move or to feed them. Their concentration must, therefore, be deferred to the very last moment, till we are close upon the enemy. But to hit off the *right* moment, to know exactly *when* to concentrate, will be the most difficult task of the general. And he will not have a chance of fulfilling it satisfactorily, nor be able to make the most of his opportunities, unless the troops are prepared to assume the offensive in action whenever necessary.

But here undoubtedly comes in the question, "Can we hope ever to gain anything by attacking in the face of the enormous advantages which modern improvements in fire-arms have conferred on the defence?" We believe that a close examination of the real state of the case will show that the question may be answered in the affirmative.

Theory has in all ages proved that the advantage lies on the side of the defence; but, then, experience has almost as invariably proved the reverse. Let us then inquire in the first place, whether the assumptions on which the theory has been founded are entitled to be accepted without reserve?

1. The defender can choose the ground which is most favourable for him.

True, but the choice is always a limited one; and is

further hampered by considerations of strategy which must be attended to, however inconvenient. How rarely does it happen that a general finds a position entirely to his mind? Most commonly he is obliged to content himself with one which offers only some, perhaps not the most important, of the advantages which he is theoretically supposed to possess.

2. The defender has time to study the ground.

This is, undeniably, a great advantage in the *conduct* of the action; but, as regards the *adoption of measures before the enemy comes up*, it has often turned out a dangerous snare. The more leisure a general has to examine a position, the more points he is sure to find in it—and in front of it, and on its flank—which cry out to be occupied; and so he drifts away more and more from his original ideas, and brings more and more of his troops into the first line. The end of it is, that his forces are frittered away, he can't tell how!

3. The defender can fortify his position.

Up to the present time this advantage has not often been extensively used. The reason may perhaps be found in the rapid progress of modern campaigns; or, at least as far as we Germans are concerned, it may be owing to some peculiarity in our soldiers, or in our system of organization. In the American war the field of battle was almost invariably fortified, and the front considerably strengthened. One consequence was that the enemy was enabled to attack the flanks without much risk, as the defenders appeared to have no notion of breaking out of their lines and making a counter-attack. Besides, the troops were over-much tied to the works in which they stood, and were not easily brought into play on other points of the field. The battle of Chancellorsville, in the spring of 1863, offers an instructive example of the mischief which may ensue from the use of field fortification.

The above considerations have reference to the period before a battle; let us see how the matter stands in the contest itself.

Modern battles consist of a series of partial actions which are not very closely connected till towards the end of the day, when one side or other has gained a decided superiority. These partial actions turn on the possession of some point of tactical importance, a village, wood, &c. The intervening ground being commanded from these points may be comparatively neglected.

Now what are the relative advantages of the attack and defence in such an action?

At first sight everyone feels disposed to say, "Unquestionably the defence has the best of it," for the advantages of the defence are palpable, and strike the mind at once; and we are all too much accustomed to argue from the impressions left by field days and sham fights, where the crucial test is wanting, and the mere notion of local strength carries undue weight. Any one who has been in the habit of looking at scenes of actual battle cannot fail to have said to himself at times, "That position looks as if it ought to have been held against any odds," or, "I can't think how men could have stormed those heights under fire."

The advantages of the attack, on the other hand, do not lie on the surface, and are only apparent when human nature and the experience of actual facts are taken into account. Let us then endeavour to realize the current of one of the partial actions we have referred to, say for the possession of a village, and let us suppose each side to have all three arms engaged.

The action is begun by the artillery, which opens fire at a considerable distance, and without producing any particular effect. Then the guns of the attacking side are moved forward, say to 1,500 or 1,000 yards, sustaining some loss during their advance, but nothing very serious probably, as it can almost always be made to a great extent out of sight of the enemy.

The infantry too push forward in company columns, and in spite of the defenders' guns, to 600 yards or so from the position. The fire of the artillery, even though it be rifled, will not do them very much damage, as they are in constant movement and take advantage of all available cover. The main body will be kept further back. The assailant can do so as long as he likes, because the choice of the moment for attack rests with him. He has, moreover, command of greater space. His infantry is not so limited as to position as that of the defenders; he can place his troops on the most favourable points within reach of the enemy, and advance them in the least exposed direction.* His artillery must, however, have resolution enough to stand without replying to the fire of the enemy's, and give their whole attention to the infantry.

* This advantage tells also and more particularly in favour of the artillery. The batteries can be kept separated by wide intervals one from the other, and yet concentrate their fire on the comparatively narrow space on which those of the defence must be crowded.

These last are posted under cover of the houses, walls, &c., of the village, and the business of the attacking batteries is to destroy both the cover and the men behind it. The direct effect of their shells will be increased by the splinters of stone, &c., which they scatter about, and the material loss of the troops on the defensive will thus be heightened. But the moral effect of the fire at this stage of the action is even more against the defence, because the men have to stand still, doing nothing for the moment, and because they are exposed to the depressing influence of the killed and wounded while the attacking troops leave theirs behind as they press forward.

Before very long too, the batteries of the defence lose the advantage they have been enjoying of firing without being fired at. The skirmishers of the attack work their way towards the village—here to within 500, there to 300 yards—and their fire, more particularly that which takes the batteries in flank, becomes by degrees so annoying that the guns have to limber up and shift their ground. This is an inconvenience to which the attacking batteries are not exposed.

As the moment for the assault approaches, the fire of artillery and skirmishers will be intensified to the utmost, and thus the attack prepared, as it is called, *i.e.*, the nerves of the defenders so shaken that they become restless and flurried, and incapable of shooting straight.

Then the "advance" sounds along the whole line; the skirmishers dash forward from all points at full speed and with ringing cheers, re-inforced, if need be, by the supports; or followed by them, and these again by the reserves; clear with little loss the intervening space of 200 or 300 yards, and drive the defenders from their—theoretically unassailable—position. Or, if they still hold their ground, the skirmishers establish themselves close by, while the columns which follow them, take up the assault at once, and overpower the enemy, whose moral force has been already shaken severely.

Such will probably be in future the form of the attack instead of the old "double column with skirmishers in the intervals," except in the case of troops of such inferior quality that they cannot be trusted to attack otherwise than in mass. The better the troops, the more ready will they be to attack in extended order, and the less serious will be their loss. They must, however, in any case be followed by columns of attack to give them moral support and confidence, to shake that of the enemy, and to deliver the final decisive

shock, should the attack of the skirmishers fail to force the position.

We may mention as instances of attacks in extended order :—Burkersdorf, taken on the 28th June, 1866, by seven companies of the (Prussian) Guard; Lipa, on the 3rd July, by three companies of the Schützen (Rifles) of the Guard; Problus, on the same day, by the Fusilier battalion of the 56th (Westphalian) regiment, with the 1st battalion in support. It is true that in these instances the attack was not opposed by breechloaders, but on the other hand it was made almost without any previous preparation by artillery fire. Where such preparation has been made, and the moral force of the defence weakened accordingly, there is no reason to doubt that even breechloaders would fail to stop an assault resolutely pushed home.

The cavalry cannot be expected to co-operate in the attack.* In the defence it may, provided that it can find good cover somewhere close to the line of the attack. In that case it may break out suddenly upon the skirmishers as they are dashing forward. But, if we suppose them to be armed with breechloaders, and to have been properly trained to use them, the utmost effect which the cavalry will be likely to produce may be to cause a temporary check to the attack at that part of the line where it appears; while on the other hand its condition after the charge will probably be such as to preclude it from making another—in that campaign at any rate.

1. The assailant can attack at any point he pleases.

As a battle consists of a series of such actions as we have attempted to sketch, and as success in one of them, properly selected, may decide the day in favour of the assailant, he has an enormous advantage in being able to choose one particular point for the principal attack, and collect an overwhelming superiority there. He can feel the enemy along the whole line, and threaten it at all points with small expenditure of force, while he concentrates his masses towards the spot he has selected. This is a far easier task than that of the defender, who has to guard all points and yet keep a strong reserve intact, at the right spot, to meet and repulse the decisive stroke at the right moment; and this while staff officers are incessantly galloping up

* This remark should, perhaps, be qualified. There would seem to be room for very effective indirect action on the part of the cavalry in protecting the attack (particularly on the flank) against such interruptions as are suggested in the next lines.

from all parts of the field to beg for immediate re-inforcement. In the present day the task is more difficult than formerly, because the reserve must be held well to the rear, in order to keep it out of fire, and the progress of a powerful and successful attack in these days of breechloaders is enormously rapid.

Nor is the recapture of the point of attack, when once it has fallen, an easy matter. All the ordinary advantages of the defence are then enjoyed by the original assailants, with these additions,—that the counter-attack must be made at once, if it is to be of any use, and cannot, therefore, be properly prepared by the fire of artillery; and that the moral force of the assailants has been raised to the highest pitch by their previous success. The truth of this is shown by the capture and defence of Chlum by the first division of the Guard on the 3rd July, 1866.

2. Again—the assailant may make mistakes, the defence must make none. During the first period of the defence (*i.e.*, till the assault takes place), the whole aim and object of the General in command and the officers under him is simply to beat off the enemy. In other words, it is a passive aim. They want to do as little as need be themselves, to make the fullest possible use of the material advantages of their position. Hence they are not as a rule prepared to take advantage of any opening which the assailant may give, and such chances have, as a matter of fact, been rarely turned to account.

The assailant may, perhaps, make his attack with only a part of his force, while the bulk of it may be struggling through difficult defiles in the rear, or engaged in a wide movement to turn a flank; he may expose his artillery without sufficient escort; some of his battalions may flinch, and yet he may very likely pass through the critical moments with impunity; his mistakes may easily escape notice altogether; or, if noticed by subordinate officers, they may not be able on their own responsibility to take measures to punish them.

In contradistinction to this, the essence of the attack lies in activity—in ceaseless, all-pervading activity. From the General-in-chief down to the Lieutenant in charge of a section of skirmishers every eye is strained to detect some weak point in the defenders' position and arrangements, every mind is on the stretch to find the shortest and surest way of closing with them. The position may seem to be completely secured by the nature of the ground; yet a path, which has

been overlooked, may be discovered by the assailant or the obstacles cleared by his readiness of resource. The troops charged with the defence of some important post may prove less trustworthy than they were thought to be, or it may chance to be left for a moment unguarded; the attacking troops, feeling the enemy at all points, are sure to find out every weak spot, to hit every blot. Cases in point are the loss of Chlum by the Austrians on the 3rd July, and the way in which the Bavarian left was turned at Kissingen on the 10th July, 1866.

3. The assailant is superior in moral force.

The mere fact of moving forward gives men courage. The wounded are left behind. Fire from the flank loses its effect, for the assailant does not think about his retreat being cut off, or care about seeing enemies on all sides of him; that is precisely the position in which he expects to find himself when he has gained his point and broken the enemy's lines.

Hence the assailant can afford to lose more men than the defender without being demoralized. And, in the long run, it does not matter if you lose 3,000 men more than the enemy, in order to win the victory. A vigorous pursuit will more than restore the balance, will perhaps result in the utter collapse or destruction of the enemy's army. (Witness Waterloo, Metz, Sedan.)

These few remarks may suffice to show that there is something to be said in favour of the attack. It is essential to cultivate and cherish the preference for offensive action in the army. It is its very principle of life. Without it, there is no energy, no victory. Only the principle must not be applied in the blind, unthinking way in which the Austrians tried to apply it in 1866. On the contrary, the advantages which belong to the attack and defence respectively must be appreciated with equal clearness and intelligence. Then the mode of action suitable to the circumstances of each case can be adopted. So, for instance, it will be evident, on a little consideration, that the larger the body of troops, the greater are the relative advantages of the attack. A company of infantry may hope to hold its ground against treble odds—one battalion against two; but, as soon as we have to deal with more extended positions and the co-operation of artillery, the advantages of the attack come out more prominently.

We remark, too, in order to prevent misconception, that we are not speaking of actions where the object is not

to arrive at a decisive result, but simply to gain time. In such cases, of course, the conduct of the fight will be purely defensive, and the local strength of the ground be made the most of.

We have laid great stress on the use of artillery. It is, in fact, the principal element of strength in the tactical offensive. It is only by it that the advance of infantry in the face of the breechloader can be made possible, and the artillery must rise to the full level of their task if the infantry are not to be sacrificed in vain.

It will be useful, therefore, to investigate the reasons why, in 1866, our artillery did not play so important a part, and to inquire how greater results may be secured from its action in the next war.

CHAPTER III.

The Artillery in 1866.

The success which attended our rifled guns in Schleswig had led people—more particularly in the Artillery itself—to expect extraordinary performances from it in 1866. After the war was over, however, many complaints were heard that these expectations had not been realized, and that it had, in most instances, afforded but slight assistance to the Infantry. Various explanations were put forward to account for the fact. At one time it was maintained that rifled guns were unsuited for field artillery; at another, that the establishment of horses in time of peace was insufficient, and so on.

We believe that the unsatisfactory performance of the Artillery may be traced mainly to the following causes:—

1. The Prussian Artillery had nothing like so many guns available as the Austrians. Nearly a third of the guns were smooth-bore, and these must be reckoned off.

2. On the march the Artillery was kept too much in rear. This is partly accounted for by the fact that the roads, to a great extent, led through immensely long mountain or forest passes. Had a collision with the enemy taken place suddenly in such ground the Artillery would have been in the way, and it would have been distinctly desirable to have as much Infantry as possible. But in point of fact all the actions occurred on our issuing (debouching) from the defiles, and then the want of artillery to cover and assist the deployment of the other arms was keenly felt. But, as the guns were a long way behind in the defile, they could not be brought forward past the other troops on the narrow roads.

Again, the Reserve Artillery was in almost all cases attached to the General Reserve, and usually marched in rear of the Infantry and cavalry which composed it. Now there is one vital difference between a reserve of artillery and a reserve of the other arms, which is this; the latter is only wanted at an advanced period of the action when it is necessary to give it a decisive turn, whereas the special

duty of the Artillery is to prepare the way for the other arms, and its employment must precede theirs. It requires, moreover, a certain time to produce the desired effect, and must therefore be brought into play earlier. The place for the Reserve Artillery on the march is immediately in rear of the main body; it may even be better for it to follow the leading division.

The practical importance of this matter was well illustrated in the case of the Reserve Artillery of the Guard on the 3rd July, 1866. It could not have taken so timely a share in the battle, nor have contributed so powerfully as it did to repulse the attempt of the Austrians to re-capture Chlum, if it had not been brought more to the front than usual when the corps marched off in the morning.

While our artillery was generally too far in rear when the action began, the Austrians had on all occasions a very large number of batteries in position. In the face of these batteries the few guns on our side which came first into action could only hold their ground with great difficulty and heavy loss; and, by the time they were reinforced by fresh ones, had suffered so severely that they either had to be taken out of fire to be re-organized or were at least partially crippled. Thus it was always excessively difficult for our artillery to establish a preponderance over that of the enemy, until the latter began to suffer from the fire of our infantry; this being just the reverse of what should have taken place.

3. The Artillery often fired from too great a distance.

This happened from a variety of causes. The enemy, whom we generally found awaiting us in positions previously selected, opened fire at very long range, but knowing the distance accurately. It was natural that our guns should be anxious to reply. Even our infantry, which was usually very chary of wasting ammunition, fired at 800 or 1,000 yards against the Bavarians.

Long ago Frederic II remarked: "The artillery is very apt to open fire too soon, whether it be from a desire to insinuate itself with the infantry or to display its courage."

Not unfrequently fire may have been commenced under an impression that the distance was not so great as it proved to be. This tendency to underrate distance in presence of the enemy was a fact noticed in the campaigns of 1813–15.

Other causes of this firing at excessive ranges may be found in the exaggerated notions as to the power of rifled

guns which had grown up at the practice butts; and in the standing order which directs artillery to change position as little as possible. So carefully was the order obeyed that guns have been seen to continue vigorously firing at an enemy 4,000 paces off, who was retiring before our infantry.

Again the nearer the guns are brought to the enemy, the more risk there is of their being captured. This danger is very apt to be over-estimated, in the present day more than ever, because the infantry fights so much more than it used in skirmishing order and under cover, and is therefore less to be seen. Many a captain may have hesitated to take his battery forward, because the infantry, hidden in wood or village, may have seemed to him too weak to protect the guns, though the enemy, suffering from its fire, may have thought it only too strong.

It was only after the war was over that we were able to appreciate the waste of power which had occurred from firing at such long ranges that the effect of the shots could not be properly noted and the aim corrected, and that even the shells which were well aimed, striking the ground at a high angle, buried themselves in it and were almost harmless.

4. The Artillery often seemed to be ignorant of, or indifferent to, the value of combined action of the different arms and to think of no tactics but those of their own branch, or, in other words, of making good practice. The evil of this made itself all the more felt, because the artillery was allowed more than due independence of action.

Artillery is essentially dependent on the other arms as it has itself no means of engaging in a hand-to-hand action. Its value consists in its power of shaking the enemy by its fire and throwing him into disorder. But to turn this disorder to account and put him to flight is the business of the other arms.

It is not enough then for the artillery to shoot well, hit the enemy and kill so-and-so many men. Indeed we might look upon such a result as needless cruelty except on the condition that the men be killed at the spot where the consequent disorder and shock to the moral force of the remainder can be at once taken advantage of by our other arms.

In order that accurate artillery fire may be of real use, it must be *concentrated on the most important point.* Troops which suffer severe loss in a very short time are apt to be

shaken and to lose resolution in a degree which is out of all proportion with the mere amount of casualties. For this reason the batteries must be kept together; that is the only possible way to ensure their being at hand when wanted. Moreover the division* commander is in a much better position to judge which is the most important object to aim at than four separate battery commanders, one or other of whom is only too likely to yield to the temptation of replying to the fire of the enemy's artillery though his infantry be at the moment perhaps the proper mark for his shells.

Further: neither the tactical effect of artillery, *i.e.*, its fire being brought to bear on the right point, nor the mere technical one, accurate shooting, is to be obtained unless the guns go reasonably close to the enemy. They must be moved forward therefore *pari passu* with the other troops in the attack, otherwise it is impossible for the officers to judge where their fire should be directed.

The decision on this point does not properly belong and should, on principle, not be left exclusively to the artillery. When we find in the orders issued by a general on the eve of a battle no more specific directions for the artillery than a request "that its officers will be good enough to co-operate in the action as they see opportunity," we cannot but think that a very dangerous degree of independence has been left to that arm. It presumes that the commander of every battery, or at any rate of each division of artillery is at least as capable as the brigade or division general of judging the tactical situation correctly. It puts him, in so far as the artillery is concerned, altogether in the place of the commanding officer, but without giving him the facilities for forming a judgment which the latter possesses. He has no aide-de-camp at his disposal, no reports are made to him, he has nothing to help him but his own two eyes. And the weight of responsibility under which he has to act is at the same time far more personal and onerous.

Besides, the fact that guns are reckoned as trophies puts the artillery in an exceptional position. The officer commanding a battalion of infantry, who evacuates a post after defending it so vigorously as to lose half his men, is highly praised—and with perfect justice. The commander of a battery, who has held his ground bravely to the last moment and then retreats bringing only three of his six guns with him deserves equally honourable recognition. Still it is unfortunate that he should have lost half his battery!

* Each Prussian *division* of field artillery has four batteries.

There is another respect too in which the artillery is at a disadvantage. A company of infantry which is struck by four shots is simply weaker by four men. But the same four shots striking a battery may for the moment stop its fire or its march.

These remarks will show that it is excessively difficult for artillery officers to act with exclusive regard to tactical considerations, and, in moments of imminent danger, to sacrifice to them all anxiety about losing their guns. It is only right, therefore, that their hands should be strengthened and the difficulty of making a decision smoothed for them by a distinct order of the General. It is his business, as General, *i.e.*, as Commander of the whole force, to work all the three arms which compose it. Though it may perhaps appear paradoxical to some artillery officers to suggest that the choice of how to use the guns had better be entrusted to an officer of infantry or cavalry than to one of the special service.

We come now to the practical question — what must we do so as to make quite sure that, when the next war comes, our artillery may rise to the full level of the very important work which belongs to it?

One thing is quite clear, the fault in 1866 did not lie in the *personnel*, *i.e.*, in the officers and men. That is the same stuff as in the other arms. And even if it were in exceptional cases inferior, that would not account for the fact; as the complaints were universal, and even the artillery itself was not satisfied with what it did. The causes must be sought, therefore, in the organisation of the arm; and they would, we believe, be met by two principal changes which should be accompanied by a different way of dealing with what has hitherto been called the reserve artillery.

1. The field and garrison artillery should be absolutely and entirely distinct.

The very first condition for getting good work done, and plenty of it, is the division of labour—setting every one to work in his own special line. We have been asking the artillery to work at two quite different kinds of work, and expecting them to excel in both. Field and garrison artillery have little in common beyond the fact that they are both artillery. The former stands in reality in far closer relationship to infantry. They both use fire-arms, only that used by one is bigger, heavier, and more effective than the other; in the matter of tactical action they resemble each other closely, and each ought to be thoroughly

well acquainted with the principles of the other's employment in the field. There can be little doubt that a good infantry officer, who has had six months' practical experience with field artillery, will work a battery in action better than a good garrison artillerist with the same experience. The difficulty which the latter would find in breaking himself in to the tactical conditions of his new sphere is almost insuperable. He may learn the mere letter of the drill and the theory of its application by diligence and attention, but the spirit of the thing is totally unlike what he has been accustomed to, and a man who has spent years among casemates and traverses, elaborately built up cover, and standing gun-carriages, can hardly cast off at short notice the old associations, and display the dashing, reckless, go-ahead spirit which beseems the gunner on the field of battle. Evidence of this was to be seen at every turn in 1866.

2. The field artillery should be made an integral part of the corps under the corps commander.

By this measure we may hope to break up the narrow exclusive spirit which has kept the artillery apart from the other arms, and accustomed it to think of itself and for itself alone. By throwing it in time of peace into closer and more constant connection with the rest of the army, mutual acquaintance and interest and respect will grow up. Living together in garrison will lead to acting together on the field.

CHAPTER IV.

INFANTRY AGAINST CAVALRY.

CAVALRY is, of all the arms, the one in which the element of moral force most distinctly preponderates. Its strength and its weakness alike lie in the impression created rather than in the effect actually produced. No one can see a well-executed charge of cavalry without an involuntary feeling that it must bear down any infantry in the world. The momentum, the product of weight and velocity, is to all appearance irresistible; and it would be so really if man and horse were a machine set in motion at the rate of some 300 yards in a minute. Twenty ranks one behind the other would be ridden over unless they ran away.

But the actual fact is somewhat different. The horse is a timorous beast, perfectly sensible to danger, and with a decided disinclination to approach the ranks from which it sees fire streaming, and on the horse sits a man who, for his part, is not always prepared to do all he knows to prevent his unruly steed from twisting round or shying to one side of the danger. Bullet and bayonet and the motionless infantry seem to him quite as awkward customers as the rushing squadrons do to the foot-soldier. The two are like the black and the white devil in the "Magic Flute."

It would seem then that the main point in training the infantry soldier to engage cavalry is to make him indifferent to their formidable appearance, and to inspire him with an absolute conviction that he has in reality nothing to fear from them.

Is this our present practice?

The recruit, who knows nothing about cavalry except that they serve on horseback, gets his first ideas about them when he learns skirmishing drill in squad He is taught the signal:—

> "Here comes the enemy's cavalry;
> What's to be done by the infantry?
> Form square, form square, form square."

So make haste, get into square; as the only way to escape this terrible enemy.

When he joins his company and drills with it, he hears

day by day the same signal; and is taught, whenever he hears it, to run for bare life. He knows that the unlucky man who is last in his place will have his name taken down and get extra drill.

Next comes the battalion. Again he hears the signal, and again he sees the whole line running with might and main to form square; even the officers can hardly keep their usual coolness and repose of manner. The skirmishers never dream of standing still and using their rifles; they run, as hard as they can, either to the battalion, or to form in the first instance a rallying square, which then moves towards the battalion as quickly as it can. What effect can be produced by all this training, but to convince the soldier that there is no hope of safety for him, or any infantry, unless it can get into square before the cavalry comes up?

Accordingly we cannot be surprised, if in 1866 our skirmishers, brave as they were, used to run off to their battalions, whenever the enemy's cavalry appeared on the scene. We know of several instances in which officers who did not choose to be seen running away were in imminent danger of being made prisoners. As a proof that this apparent fear is simply the effect of the men's training, we may mention a couple of incidents from that campaign. On both occasions, infantry, which had been exposed, it is true, to heavy artillery fire, was posted in a wood; a cry was raised, "cavalry coming," and the men proceeded, without orders, to form square *in the middle of the wood*, until the officers managed to bring them to their senses again.

A battalion of the (Austrian) regiment Archduke Ferdinand was surprised to the south-west of Benatek* by a single squadron of the 10th Hussars (Magdeburg), and laid down its arms without firing a shot. Why? No doubt, because the men were surprised, and not having time to form square, fancied that they could not defend themselves in any other formation.

It will no doubt be urged that, considering the tremendous moral effect which is notoriously produced by cavalry, the resolution of the infantry will be likely to break down, unless they receive the charge in square, *i.e.*, in a close, compact formation, to which they have been previously thoroughly drilled. Least of all, can men be expected to stand in extended order; they will inevitably run together or surrender.

This argument may have been perfectly true in the wars

* 3rd July, 1866.

of 1813–5; but circumstances are very different now. Infantry has gained in material strength by modern improvements far more than cavalry has, and there is no reason why its gain in moral strength should not be even greater.

In the present day, cavalry must be kept out of range—that means a *long* way off—and has accordingly greater difficulty in seeing when an opening for attack occurs, and yet more in taking advantage of it in time. Also it is exposed to more fire during the attack than was the case formerly; for even though the infantry, against which its charge is directed, reserve its fire—as it is well to do—until the cavalry is close, yet the latter will receive fire from other troops on the right and left, which, not being immediately threatened, will shoot all the better.

As regards the development of moral force, the experience of the last war (1866) has convinced us, and to an extent which we did not at all anticipate, how very largely it has been affected by the steady consistent training of the men. We need only instance the (Prussian) cavalry charges which were invariably pushed home, and the excellent rifle practice of our infantry. The hundredweight of lead, which it took, according to the old saying, to kill a man, was reduced to a pound; and this, not only nor principally in consequence of the guns being rifled instead of smooth bore. And as we have effected these improvements, so can we, if we choose, bring it about that our infantry shall cease to have any fear of cavalry. Nothing more is wanted than that men should be trained to the conviction that they can, under any circumstances, repulse cavalry by a rapid and well-aimed fire.

Before the war broke out, it was pointed out by a very high authority, that infantry in any formation ought to beat off cavalry by their fire. And at Gitschin,* one battalion of the 8th Brandenburg regiment (the King's Own) formed line to the rear when attacked, and repulsed the cavalry with loss. The exploit was immediately published as an example for the whole army.

No sooner, however, was peace restored, than the square formation flourished as vigorously as ever. The English is the only army where the principle has been distinctly enunciated, that "the attack of cavalry is to be received in line;" "if it comes from a flank, part of the line to be wheeled back to meet it."

Might not our infantry too be taught on the drill-ground

* 29th June, 1866.

to entertain the idea that defence may be possible in other formations than in square? Might not a company once in a way be drawn up in line to receive cavalry? A battalion in double column simply show front to all sides, the intervals being filled up by the nearest non-commissioned officers of the supernumerary rank? It is undoubtedly objectionable to teach the men a very great number of different formations, as it may easily cause confusion at a critical moment, but the main point after all is that the drill of the infantry soldier should accustom him not to be afraid of cavalry.

Let skirmishers be drilled, instead of running together, to receive the cavalry in line with quick fire; and, if that does not stop them, to lie down. They would in reality suffer hardly at all. The worst that could happen would be that the cavalry would ride over them. The horses would not touch them; the riders could not reach them; and they could re-open fire from the rear as soon as the charge had swept by. The supports should *advance;* they will thus inspire confidence to their own side and impose on the enemy. Should the attack come from a flank, the support should wheel towards that flank, either extending or not, as may seem best.

When once skirmishers have learnt that they can meet cavalry in extended order they will never be at a loss to find some cover to shelter them; high corn, if nothing better.

There can be no stronger proof of the absolute necessity of breaking infantry soldiers of any dread of cavalry than the simple fact that at present the mere appearance of cavalry puts a stop to an infantry attack, no matter what its character. The skirmishers may have worked their way in spite of opposition and loss to within 150 yards of the enemy; but, if cavalry threaten, they double back as hard as they can to their supports, the supports and reserves halt and form square, presenting admirable targets to the enemy's fire.

But suppose instead the simple rule were laid down: "The body of troops which is actually attacked by cavalry will defend itself in any formation in which it happens to be; the other troops will continue the operations in which they are at the time engaged."

It is quite impossible to go too far in this direction.

The moral effect produced by cavalry is so great, that every private in the ranks may be implicitly trusted to take sufficient—and probably more than sufficient—precautions for his safety when attacked by them.

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